EDISON
ELECTRIC INSTITUTE
BULLETIN

— CONVENTION NUMBER —

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EDISON ELECTRIC INSTITUTE

STATISTICAL DATA OF THE ELECTRIC LIGHT AND POWER INDUSTRY

Compiled Monthly by the Edison Electric Institute—Covers 100% of the Industry

DURING MONTHS OF JANUARY, FEBRUARY and MARCH, 1938

	January	February	March
	SOURCE OF ENERGY		
Kilowatthours Generated (Net)			
By Fuel Burning Plants	5,816,585,000	4,924,547,000	5,269,656,000
By Water Power	3,273,470,000	3,288,380,000	3,687,919,000
Total Generation	9,090,055,000	8,212,927,000	8,957,575,000
Net Purchases			
From Other Sources	333,136,000	304,048,000	292,513,000
Net International Imports	86,779,000	74,556,000	78,534,000
Total Purchased Power (net)	419,915,000	378,604,000	371,047,000
Total Input	**9,509,970,000**	**8,591,531,000**	**9,328,622,000**
	DISPOSAL OF ENERGY		
Total Sales	**1,930,167,000**	**7,432,231,000**	**7,469,489,000**
Energy Not Reported as Sold			
Used in Electric Railway Departments	41,255,000	35,694,000	36,106,000
Used in Electric and Other Departments	162,705,000	148,661,000	152,674,000
Furnished Free or Exchanged in Kind	5,627,000	2,047,000	1,872,000
Total Not Reported as Sold	209,587,000	186,402,000	190,652,000
Total Energy Accounted For	**8,139,754,000**	**7,618,633,000**	**7,660,141,000**
Losses and Energy Unaccounted For	1,370,216,000	972,898,000	1,668,481,000
Total Output (To check above **"Input"**)	**9,509,970,000**	**8,591,531,000**	**9,328,622,000**
	KILOWATTHOURS SOLD		
Based on FPC Classification			
Residential or Domestic	1,822,496,000	1,666,757,000	1,590,215,000
Commercial and Industrial	5,147,305,000	4,905,499,000	5,005,890,000
Public Street and Highway Lighting	200,356,000	175,342,000	166,439,000
Other Public Authorities	188,614,000	175,504,000	179,633,000
Sales to Railroad and Railways	519,927,000	463,605,000	483,054,000
Interdepartmental	42,062,000	35,921,000	34,742,000
Other Sales	9,407,000	9,603,000	9,516,000
Total Sales	**7,930,167,000**	**7,432,231,000**	**7,469,489,000**
	NUMBER OF CUSTOMERS		
Based on FPC Classification			
Residential or Domestic	22,623,387	22,619,588	22,636,333
Commercial and Industrial	4,522,542	4,521,704	4,571,010
Public Street and Highway Lighting	25,760	26,265	26,033
Other Public Authorities	72,407	73,261	73,760
Railroad and Railways	284	289	293
Interdepartmental	316	305	307
Others	3,604	3,538	3,494
Total Customers	**27,248,300**	**27,244,950**	**27,311,230**
	REVENUE		
Based on FPC Classification			
Revenue from Sales Excluding Sales to Other Pub. Utilities	$189,826,300	$179,535,500	$175,018,400
Other Revenue	2,054,300	1,671,600	1,900,700
Total Revenue	**$191,880,600**	**$181,207,100**	**$176,919,100**
	ESTIMATED DOMESTIC ELECTRIC SERVICE RATIOS (For the 12 Months Ended January, February and March)		
Kilowatthours per Customer	806	811	816
Average Annual Bill	$35.30	$35.36	$35.50
Revenue per Kwhr	4.38¢	4.36¢	4.35¢

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 6 JUNE, 1938 No. 6

The Institute Holds Its Sixth Annual Convention

ADDRESSES of a high order, packed with valuable information for the entire industry, the interest and cooperative spirit of the more than 1200 delegates and guests attending, the efficient work of the Arrangements committee, together with the pleasant weather prevailing during the week, made the Sixth Annual Convention of the Institute, held at Atlantic City, June 6-9, one of the most profitable and enjoyable meetings yet held by members of the electric light and power industry.

The speakers at the business sessions gave penetrating analytical discussions ranging through such subjects as the government's relations with the industry and with business in general, power sales and competition, public utility advertising, public relations, possible accounting economics, building for the future in residential sales, the trend of plant costs, the two World's Fairs to be held next year, customers and service, the new fluorescent lamp, business leadership, and finally an examination of the present status of capitalism.

Speakers in the order of their appearance were Messrs. C. W. Kellogg, Engineers Public Service Company, New York, N. Y.; W. H. Sammis, The Commonwealth and Southern Corp., New York, N. Y.; H. S. Metcalfe, West Penn Power Company, Pittsburgh, Penna.; H. A. Snow, The Detroit Edison Company, Detroit, Mich.; B. S. Rodey, Jr., Consolidated Edison Company of New York, Inc., New York, N. Y.; D. M. DeBard, Stone & Webster Service Corporation, New York, N. Y.; A. H. Kehoe, Consolidated Edison Co. of New York Inc., New York, N. Y.; J. E. Davidson, Nebraska Power Company, Omaha, Nebr.; Colonel John P. Hogan, New York World's Fair 1939, Inc., New York, N. Y.; Colonel J. Franklin Bell, Golden Gate International Exposition, San Francisco, Cal.; W. H. Harrison, American Telephone and Telegraph Company, New York, N. Y.; H. W. Burritt, Nash-Kelvinator Corporation, Detroit, Mich.; Ward Harrison, General Electric Company, Cleveland, Ohio; Dr. Virgil Jordan, The National Industrial Conference Board, New York, N. Y., and Dr. W. W. Cumberland, Wellington & Company, New York, N. Y.

The spacious Atlantic City Convention Hall was comfortably filled for each business session with attentive delegates, while the more recreative occasions such as the President's Reception, the Annual Banquet and the dances held each evening at the Traymore Hotel attracted not only throngs of delegates but their wives, daughters and friends.

The scheduled general sessions were by no means the only business meetings held, since the Board of Trustees, the Operating Committee and a number of other committees including the Sales, the Rate Research, and four of the Accounting groups all held sessions during the Convention.

The Banquet held Wednesday evening in the Ballroom of the Hotel Traymore gave delegates the opportunity of hearing witty and inspiring talks by President Kellogg, Messrs. Thomas N. McCarter, President, Public Service Electric and Gas Company; Louis H. Egan, President, Union Electric Light and Power Company; B. C. Forbes, Editor, Forbes Magazine, and R. H. Mather, President, Canadian Electrical Association. Following the banquet, guests adjourned to the Rose Room of the hotel for a delightful program provided by professional entertainers.

In addition to recreational activities previously mentioned, a golf tournament was held at the Seaview Golf Club on Wednesday afternoon, and a fashion show on Tuesday for the ladies attending the Convention.

All officers of the Institute were re-elected for the 1938-1939 term as well as all trustees whose terms expired this year, with the exception of Mr. George O. Muhlfeld who has recently retired from the Stone & Webster Corporation and active work in the electric industry. Trustees re-elected are Messrs. Frank D. Comerford, Boston Edison Company, Boston, Mass.; Samuel Ferguson, The Hartford Electric Light Company, Hartford, Conn.; P. H. Gadsden, The United Gas Improvement Company, Philadelphia, Pa.; C. E. Groesbeck, Electric Bond and Share Company, New York, N. Y.; W. J. Hagenah, Duquesne Light Company, Chicago, Ill.; Edward Reynolds, Jr., Columbia Gas & Electric Corporation, New York, N. Y.; A. H. Schoellkopf, Niagara Hudson Power Corporation, New York, N. Y., and E. W. Wakelee, Public Service Electric and Gas Company, Newark, N. J.

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Thanks are due especially to the Convention Arrangements Committee, headed by E. A. Lewis, Vice-President and General Manager of the Atlantic City Electric Company and Honorary Chairman of the Committee, and R. E. Swift, also of the Atlantic City Electric Company, and Chairman of the Committee, which was responsible for the thorough planning and hospitable attention to the details of the Banquet and other Convention affairs.

FIRST GENERAL SESSION

The first general session was opened Tuesday morning, June 7, by Mr. Kellogg with the presidential address. In spite of past and present disagreements between the Federal Government and the electric utility industry, Mr. Kellogg found a hopeful indication of a more cooperative relationship in the study of the regulatory provisions of the Holding Company Act now being made by the Securities and Exchange Commission with the cooperation of representatives of the principal holding companies.

"It is of course too early yet for any tangible result to emerge from this cooperative effort," Mr. Kellogg said, "but conferences have begun and the gesture itself should be of happy augury for our industry." Chairman Douglas' words and actions indicate a clear desire to enable the utilities to perform efficiently their essential public service role in the life of the people, Mr. Kellogg noted, and he promised that the utilities would meet this proffered cooperation in the same spirit that prompted it.

Discussing the industry's growth since the genesis of the Public Utility Act, which Mr. Kellogg placed in the Federal Trade Commission investigation begun in 1927, he pointed to an expenditure of $5,400,000,000 by the industry for construction of its properties in the eleven-year period, and 6,870,000 new customers served during the same time; a reduction of the average residential rate by 37 per cent; and an increase in the average annual domestic consumption of 85 per cent. In the same period the number of electrified farms was increased by 302 per cent, he added.

"Throughout this decade the attack on the electric industry by the Government has been well-night continuous," he charged.

"What the public thinks about our performance is best evidenced by their votes. You will recall in this connection that analysis of the 22,638,000 votes cast in 540 local elections during the last five years on the subject of municipal ownership shows the per cent of votes favoring municipal ownership to have dropped from 70.5% in 1933 to 11.5% in 1937.

"This striking public verdict is most gratifying but we must remember the obligation it imposes on us all to continue to merit it in future. We have nothing to sell but service and no goal except perfection in that service."

Selective selling to meet the steady decline in the earning power of invested capital and other serious present problems of the electric utility industry was discussed by Walter H. Sammis, Vice-President, Commonwealth and Southern Corporation.

Mr. Sammis pointed out that increases in gross revenue no longer bring corresponding increases in net income, and the earning power of invested capital is showing a steady decline due largely to increased taxes, wages and other costs. Indications so far this year, he said, are that the electric light and power companies will have, for the year 1938 as a whole, an operating income of about $654,000,000. The U. S. Census of 1927 shows for that year an operating income from electric operations of $645,000,000. Operating income of the electric light and power industry, Mr. Sammis concluded, is thus practically back where it was eleven years ago, although in the meantime between four and five billion dollars has been invested in additional plant and equipment.

Mr. Sammis discussed briefly the present status of electrification in industry, the prospects for greater sales to industry, the charges for utility service and selling to accomplish a greater return per dollar of plant investment.

It was the opinion of Mr. Sammis that direct contact with power customers produced the best results when the power salesman evaluates the many collateral advantages of purchased power. In many cases the cost of direct contact is prohibitive, he said, and proposed that this method be supplemented with publicity and advertising.

A strong plea for a new evaluation of the obstacles which stand in the way of a more favorable public opinion for the electric utilities, and for the recognition and use of means for overcoming these obstacles, was made by H. S. Metcalfe, Director of Public Relations for West Penn Power Company.

Mr. Metcalfe, whose address was entitled "Stones for David's Sling," declared that there are today three Philistine conditions which confront American business in general and the electric utility industry in particular: unfriendly attitudes; the new era of questioning; and the tyranny of words. There are five stones for David's sling, he said, which can meet and overcome these conditions—friendliness, logic and three kinds of facts, facts about the utility industry, facts about what people think, and facts about economics.

Friendliness Mr. Metcalfe placed at the head of the list of those forces which utility companies should adopt to meet these obstacles. "There is no record that any business ever damaged itself by being genial, or ever suffered a loss of prestige by speaking from the exact level of its customers. People still like to do business with friends and find friendship a vital force in persuasion."

Creation of a committee for the consideration of the advertising and publicity factors in public relations was advocated by Mr. Metcalfe.

Panoramic View of the Wednesday Morning Session

Lower prices for electricity can best be obtained through a reduction in the burden of taxes and the high costs that the Federal Government has saddled upon the public utilities, Harry A. Snow, Controller of the Detroit Edison Company, the last speaker at this session affirmed.

"Lower unit cost for electric service may be attained in many ways, for example through lower labor costs," Mr. Snow said. "However, the Wagner Labor Relations Act, the Wages and Hours Bill, etc., and the continuing attitude of the Administration all work toward higher wages and shorter hours, and hence, of course, toward higher costs.

"Lower costs may be attained through lower coal prices, now made difficult by the Guffey-Vinson Coal Control Act.

"Lower costs may be attained through lower interest rates. The Securities and Exchange Act has not made it easier to refinance, nor has confidence in the continuing solvency of utility companies been increased by the Public Utility Act of 1935.

"Lower costs may be attained through lower taxes, and with this fact in mind we note as recent additions to the tax burden imposed on utilities the Old Age Benefits Tax, the Unemployment Compensation Tax, the Federal Excise Tax on electricity, the Undistributed Profits Tax and a higher Income Tax.

"Lower costs may be attained if less reports be required of the accounting staffs of utilities.

"While the Federal Government is earnestly seeking lower prices for electric service on the one hand, it makes the attainment of lower prices as difficult as possible by its 'reform' program on the other. And the statement that the answer to the problem lies in lower rates with automatically larger volumes, lowered unit costs and increased profits is quantitatively hopelessly inaccurate."

Based upon the experience of his company, Mr. Snow challenged the statement of the TVA that low electric rates are not only a stimulus to output but even produce lower unit costs so that profits are actually increased.

"The cost of electricity is so small a part of the cost of living, or of the cost of manufacturing, that small changes in the cost of electricity probably exercise negligible effects on the habits of life or the volume of manufacture."

SECOND GENERAL SESSION

Suggestions for checking the rapidly increasing costs of accounting operations in the electric utility industry were discussed by B. S. Rodey, Jr., Assistant Controller of Consolidated Edison Company of New York, Inc., the first speaker at Tuesday afternoon session.

While production costs have been reduced to approximately one-half what they were thirty years ago, Mr. Rodey said, accounting costs are today 30 per cent greater. A great many causes have contributed to this increase. Among them Mr. Rodey included the requirements of regulatory commissions, such as work order systems, elaboration in primary construction accounts, extension of expense accounting, continuing inventories, depreciation accounting, and other costs due to regulation.

Mr. Rodey included also the requirements due to taxes and related matters—income taxes, franchise tax, sales tax and social security tax. Consumers' accounting, consumers' deposits, and management requirements such as budgetary control, financial statements and reports, and labor and payroll statistics increase accounting costs still further, he said. Other factors in the increase are cost accounting, departmental reports and forms, and outside inspections, investigations and audits.

Mr. Rodey detailed a number of economies that might be possible in each of these instances.

The next speaker, Mr. Davis M. DeBard, Vice-President of Stone & Webster Service, urged the utilities to give greater attention to building residential electric sales because it is this classification of customers which "bring more grief; they are the basic source of our rate and political interference difficulties."

He said that the industry had not begun to scratch the surface of residential potentialities. The way to increase use was to sell the convenience and the value of the service and not the kilowatt-hours.

Mr. DeBard emphasized the following points which are vital if we are to build soundly for the future in residential sales.

1. "We must hold our present revenue against load mortality due to progress in the industry.
2. "We must find our market for expansion of service among the unsold, the low-use-customers of today and the new building developments of tomorrow.
3. "We must develop our market with careful attention to the load factors involved lest we find ourselves in the anomalous position of having increased our kilowatt-hour output at a loss in dollars of net due to excessive investment requirements.
4. "We must hold our market by selling the use, not just the appliance, by the development of sound public relations built on our own intimate understanding of the public's needs, and the public's appreciation of us."

Utilities will be in a better position to participate in the expansion of the next period of national prosperity at increment costs below the present national average because present facilities can be expanded rapidly at costs below the present level, in the opinion of A. H. Kehoe, Vice-President of Consolidated Edison of New York.

Present generating and transmission facilities are of such capacity that a rapid growth in load would result in no increase

Panoramic View, Continued, of the Wednesday Morning Session

in cost of these facilities, he declared. "While the future cost of distribution plant is doubtful, the probabilities are that the increment capacity will be supplied at lower cost than the present national average."

The technical advancements in steam power plants make it possible to add new capacity at reasonable costs, with only moderate retirement costs, and at the same time make a very appreciable improvement in the operating economy in a large percentage of existing steam power plants, Mr. Kehoe declared.

Faced with an inquisitive and impatient public, the utilities must seek new ways to bring about a better public understanding and closer contact with customers, J. E. Davidson, President of Nebraska Power Company, told the convention.

He listed ten ways to make your customers like your company and urged business men to be more alert than ever in maintaining continuous contact with the minds of its customers, keep abreast of these rapid changes and strive to improve methods of dealings to attain a stronger friendship. Declining to present himself as a public relations doctor, Mr. Davidson spoke as a veteran patient discussing the diagnosis. He stressed the importance of the industry to make a careful check of public relations with the view of determining the weak spots.

Utilities must dedicate themselves to even greater civic responsibilities, Mr. Davidson said. "We must make every citizen of every community we serve feel that we are 'part and parcel' of the community." Not only "must we be civic conscious," he said, "but we must assume community leadership."

THIRD GENERAL SESSION

Opening the Wednesday morning session, Col. John P. Hogan, chief engineer, New York World's Fair and Col. J. Franklin Bell, Executive Vice-President, San Francisco Golden Gate International Exposition, told of plans under way for their respective fairs, especially with respect to the part that electricity will have at these expositions.

Mr. W. H. Harrison, American Telephone & Telegraph, discussed customer relationships in the utility industry from the point of view of the telephone industry.

Mr. Harrison declared that, "broadly speaking, service, good or bad, is the product of instrumentalities and of the organized effort and will of the personnel." He pointed out that there has never been a period so productive as the present of better facilities directly involving the customer.

In the Bell System, Mr. Harrison said, there have been developed tools which make available to supervision on a current and programmed basis significant and dependable facts as to just what standards of service are maintained. He stated that these tools take form in periodic results data procured on a sampling basis, and for the most part by specially selected employees not engaged in the work under scrutiny.

The first step toward the reemployment of the unemployed is the sale in increased quantities of the country's farm and factory products to those who are at work, Mr. H. W. Burritt, Vice-President of Nash-Kelvinator Corporation, said in describing the National Salesmen's Crusade sponsored by his company and now rapidly spreading throughout the country.

"Sales Mean Jobs," slogan of the Crusade, sums up the five basic truths upon which the Crusade is founded, Mr. Burritt said. These points he listed: (1) unemployment is a major national problem; (2) the ability to buy is still found among the citizens; (3) increased sales will increase employment, which, in turn, will bring added buying power; (4) the American Salesman thus has a remarkable opportunity to aid in the solution of unemployment; and (5) the business of any manufacturer or industry will be helped by the success of other manufacturers or industries.

Describing the launching of the campaign at Lincoln, Nebraska, Mr. Burritt gave a chronology of the seven days, beginning with May 11, when the plan was first proposed to the Lincoln Chamber of Commerce, through May 18, when canvassing commenced. The Mayor of Lincoln, Governor Cochran of Nebraska, the utility company, department stores, newspapers, broadcasting stations, dealers, retail salespeople

(*Continued on page* 311)

Accounting Activities During the Convention

FOUR of the Accounting committees held meetings in Atlantic City on June 6 in conjunction with the E.E.I. national convention; the Plant Accounting and Records Committee—Vice-Chairman, Mr. J. V. Cleary presiding; the Purchasing, Stores and Transportation Committee—Mr. E. S. Brock, Chairman; the Customers' Relations, Commercial Accounting and Collections Committee—Mr. K. E. Boyle; and the Classification of Accounts Committee—Acting Chairman, Mr. R. B. Curran.

The Plant Accounting Committee held an all day session Monday, the full time being devoted to a general discussion of matters relating to the requirements of the new regulatory classifications and orders with respect to plant records. Because of limited attendance of both the Stores and Commercial Accounting Committees, discussion in these two committees had to do more particularly with the committee organization and a general discussion of the proper and more useful approach to the many problems and changes being brought about by the newer and more voluminous accounting requirements.

The death on May 10th of the well loved and distinguished Chairman of the Classification of Accounts Committee, Mr. Forrest P. Dexter, made this meeting a most lamentable gathering. Mr. R. B. Curran, of the Connecticut Power Company, was unanimously chosen as Acting Chairman of the committee and the first order of business was the passing of the following resolution in memoriam to Mr. Dexter:

"WHEREAS, the members of the Classification of Accounts Committee of the Edison Electric Institute have learned with great sorrow of the death on May 10, 1938, of Forrest P. Dexter, of the Engineers Public Service Company, and the Chairman of their committee

"NOW, THEREFORE, be it

"RESOLVED: That the Classification of Accounts Committee hereby records its appreciation of the faithful and valuable services which Forrest P. Dexter gave to this committee. By his death, the Committee has lost an enthusiastic supporter and sincere friend, and the electrical industry has lost one of its accounting pioneers. Mr. Dexter has been identified with the industry since July, 1899, when he was employed as a clerk in the treasurer's office of the Massachusetts Electric Companies, Boston, Massachusetts, and at the time of his death was Assistant Treasurer of the Engineers Public Service Company. Mr. Dexter was regarded in accounting circles in the industry as a dean in matters relating to the classification of accounts, and in 1936 was selected as the Chairman of a group representing the industry which was responsible for the drafting of the suggested uniform system of accounts which represented the thoughts of the industry on the matter of such classification. And be it further

"RESOLVED: That this expression of our esteem and sorrow be entered in full upon the minutes of this meeting, and that a copy thereof be transmitted to Mrs. Dexter and to the Engineers Public Service Company."

The Committee then took up matters relating to more standardized form for several important accounts in the newer classifications which had been rather loosely drafted, in the hope that more specific instructions would be useful to the industry, as well as a general discussion of interpretations of accounts.

Several informal meetings of committees and luncheons of accounting people attending the convention were held during the four day's stay in Atlantic City.

In addition to the regular committee work, consideration of the committees was directed toward the formulation of the program for the forthcoming Second Accounting Conference to be held in November. Plans for making this a very extensive and important meeting are under way. The American Gas Association Accounting Section has accepted the invitation of the E.E.I. Accounting Committee to make this a joint conference and there is every indication that the Second Accounting Conference will exceed the Detroit meeting of last November in both value to the industry and in attendance.

The President's Address

By C. W. Kellogg

President of the Edison Electric Institute and Chairman of the Board, Engineers Public Service Company, New York, N. Y.

An Address before the First General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1938

THE annual report of the President performs a two-fold function —to report on the state of the industry and to serve as a record for the future of the main developments of the year.

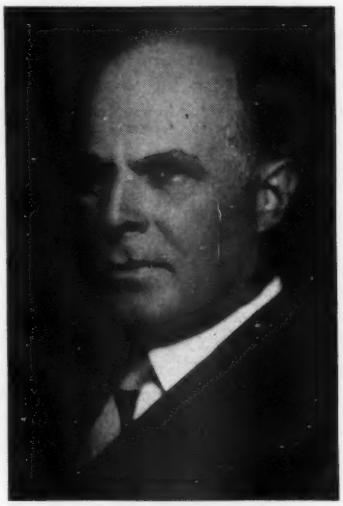
Government Cooperation

The Institute year now ending has witnessed the registration with the Securities and Exchange Commission under the Public Utility Holding Company Act of practically all such companies in this country. At the suggestion of Chairman Douglas of the Commission, a committee, representing the principal holding companies, has been set up to cooperate with the Commission in the study of possible reintegration of the existing utility groups and of the regulatory provisions of the Holding Company Act.

It is, of course, too early yet for any tangible result to emerge from this cooperative effort, but conferences have begun and the gesture itself should be of happy augury for our industry. One of the principal things the utilities have suffered from in recent years has been a punitive attitude by the Federal Government. The removal of this threat will help greatly to enable the utilities to perform efficiently their essential public service role in the life of the people; and Chairman Douglas' words and actions indicate a clear desire to do just that. The utilities may be counted upon to meet this proffered cooperation in the same spirit that prompted it. It is devoutly to be hoped that the same cooperation may be obtained from other Government departments whose activities intimately affect the utility industry.

The Bond and Share Cases

While the electric utility industry will be found most willing to cooperate with the Government in the regulation provided by the Public Utility Holding Company Act, the outcome of the Electric Bond and Share cases cannot, as a matter of current history, be passed by without comment. It should be stated for the record that the original promise of a test of the constitutionality of the Act was not carried out in the trial of the Bond and Share cases. It will be



MR. KELLOGG

recalled that in the autumn of 1935 (the Holding Company Act having become law on August 26 of that year) most of the utility holding companies, on the advice of their counsel, filed suits to test the constitutionality of the Act and that subsequently, on November 26 of that year, the S.E.C. filed its mandamus suits against the Electric Bond and Share Company. The Government then sought to have all the other cases held in abeyance, claiming that the Bond and Share cases would cover all the issues. As late as March 27, 1936 (four months after the filing of these cases) the United States, in its brief before the Supreme Court in opposition to the granting of a writ of certiorari in another test case, said, at p. 23 of the brief, in referring to the Bond and Share cases, that they *"will offer a truly adequate case to test the constitutionality of the Act."* This had been prefaced by the statement (p. 21 of the brief) that

"The Government has always conceived that it has a duty to the public, the Congress, and the affected holding companies to test the Act promptly"

and that (in the same paragraph)

"No fairer or broader test of the Act could be suggested"

than the Bond and Share cases.

After having, through these and similar representations, succeeded in getting all other cases quashed or quieted, the Government then proceeded in the actual trial of the Electric Bond and Share cases, to resist the effort of these companies to have the validity of the Act passed on by the trial court, the Court of Appeals or the Supreme Court, and succeeded in simmering the cases down to the separability of two sections of the Act. I should rather leave to others to say whether the success of this maneuver was not too dearly bought at the price of sacrificing in the process the good faith of our national Government.

How the Industry Has Met Government Attacks

From the point we have now reached in our development it is worth while to pause and look back over our trail. The Federal regulation of the utility business embodied in the Public Utility Holding Company Act of 1935 had its genesis, as the Act itself plainly states, in the Federal Trade Commission investigation begun in 1927. From this ex-parte investigation finally resulted the Public Utility Act of 1935. What has the electric utility industry itself done in the decade since the original investigation started in 1927? From the beginning of 1927 to the end of 1937 the electric utility industry expended on construction to its properties about $5,400,000,000 and brought electricity to about 6,870,000 new customers. It reduced its average residence rate by about 2.6c. a kilowatt-hour, or 37 per cent, and increased the average annual consumption in the home by 365 kwhr or 85 per cent. In the same period the number of electrified farms was increased by 932,000, or 302 per cent. The year just closed contributed its due share to this excellent record of 11 years, but I will not attempt to give the details at this time, since they are fully covered by the Statistical Bulletin Number 5 of the Institute, which was published and distributed to our members only a few weeks ago.

Throughout this decade the attack on the electric industry by the Government

has been well-nigh continuous. At first it was confined largely to publicity statements about the findings of the Federal Trade Commission, but during recent years the publicity has been reinforced by huge cash subsidies from the Federal treasury, in the form of gifts of over $150,000,000 to municipalities to compete with their local utilities. Actual seizure of private utility property by the Government, without just compensation, would be instantly recognized by the average citizen as contrary to constitutional rights. The public did not at first recognize, although I believe it is coming to do so, that destructive competition, through tax-supported subsidy, has exactly the same effect as actual seizure. Until this realization became general public opinion, the only defense the companies had was to strive to do a continually better, more efficient and more economical job in service to the people. What we have accomplished, so far as figures can reveal it, I have just stated. What the public thinks about our performance is best evidenced by their votes. You will recall in this connection that analysis of the 22,638,000 votes cast in 540 local elections during the last five years on the subject of municipal ownership shows the per cent of votes favoring municipal ownership to have dropped from 70.5 per cent in 1933 to 11.5 per cent in 1937.

This striking public verdict is most gratifying but we must remember the obligation it imposes on us all to continue to merit it in future. We have nothing to sell but service and no goal except perfection in that service.

Government Competition

I have spoken of the more appreciative attitude of the public toward our service. It can hardly be said that this same attitude has yet been shown in the matter of Government competition. Since our last convention, the Federal Power Commission has issued its findings on cost allocation at Bonneville Dam on the Columbia River, indicating that for the initial installation only 22 per cent of the cost will be charged to electric power, the balance going against the taxpayer for navigation. In the case of T.V.A., the Authority has not yet complied with the statutory requirement to file cost allocations with Congress, but its spokesman, before the House Appropriations Committee, in April last year, estimated about 37½ per cent allocable to electricity. It is not for us to say whether subsidies of this magnitude are or are not wise public policy, but as operators we can say definitely that they prevent the operation of an electric plant so subsidized from being any accurate measure (yard-stick, foot-rule or any other) of what it would cost a private enterprise not so subsidized to produce power.

An interesting decision has been reached recently in the case of the proposed development of electric power from the Elephant Butte Dam on the Rio Grande. In this case the political influences were of a different nature from Bonneville or T.V.A. Here there was no taxpayer on whom to saddle that part of the investment load not borne by power, the only other corresponding person being the irrigation farmer. In this case we find 100 per cent of the cost of the Elephant Butte Dam and reservoir (built as an irrigation project) being allocated by the Government to electric power. Since the Grand Coulee development derives its legality from being an irrigation project, it will be interesting to observe how in future its construction costs are allocated as between power and irrigation.

Finance

The effect of the inability of our industry as a whole to raise capital funds through the sale of equity securities has continued to be obscured by the relative stagnation in business. The favorable volume of business in the latter part of 1936 and the early part of 1937 was too short-lived to have any lasting effect, and today finds industrial activity back at levels comparable with the darkest parts of the 1930 to 1935 depression. The short spurt, while it lasted, however, showed up the limitations on financing which our industry will face if and when normal business activity is resumed.

You will recall that in the boom period from 1925 to 1930 inclusive, before the Government raid on utility credit, the billions needed for plant were raised about one-half by operating company securities, largely bonds, one-sixth from retirement reserves and one-third by stocks, in which latter the holding companies played a prominent part. During the subsequent depression period (1932 to 1935, both inclusive) reserves and surplus earnings were more than enough to pay for the reduced construction requirements of that period. During the last two calendar years, 1936 and 1937, figures recently compiled of the sources of construction funds show approximately one-sixth of the total coming from operating company senior securities, an approximately equal proportion from undistributed net earnings, well over one-half from retirement reserves and the remainder (about one-tenth) from bank loans, the sale of treasury assets and reduction in cash. The proportion of the construction requirements of the last two years raised from reserve funds plus net earnings withheld from stockholders, was nearly three times as large as in the boom period before 1930.

While, therefore, there is mild satisfaction on the thought that 1.5 billions of new construction was paid for during the last six years with only about 10 per cent of the total raised by the sale of bonds, on the other hand the record shows the entire inability to finance the requirements of a major upturn from current funds or (if the present conservative ratio of bonds to total investment is to be kept) without the base of substantial amounts of equity money. In a word, we must not lull ourselves into a false feeling of financial security based on the depression experience.

As an offset to this relatively pessimistic thought, we should bear in mind that the recent great depression and its present aftermath both gave further demonstration on a broad scale of the relative stability of our industry. The bottom of the major depression showed the manufacturing index of the country down to 53 per cent of the 1929 level, while our industry's gross at the bottom was over 90 per cent. Similarly this spring, the value of manufactured products was down to 57 with respect to 1929, while our gross was still well above the 1929 level. If the electric industry in future could count on Government cooperation instead of attack, the inherent stability of our business should in future, when equity money is needed, appear as attractive to stock buyers then as it has in the past.

Farm Electrification

We have been making long strides in farm electrification in recent years and at the present time about 1,300,000 farms are taking electric service, or 20.2 per cent of the farms with occupied dwellings and 30 per cent of those with dwellings valued at $500 or more. If all farms with occupied dwellings within reach of existing lines took service, the 20 per cent would be raised to 25 per cent. The average farm electrification of about 20 per cent varies widely throughout the nation: from 95 per cent in the small, densely populated state of Rhode Island and 90 per cent in California to only 2½ per cent in Missis-

sippi and 3 per cent to 4½ per cent in Arkansas and the Dakotas.

The Federal Government since 1935 has appropriated for rural electrification a total of $98,599,000, part of a grand total of $427,000,000 to be spent over eleven years ending in 1946. Pending appropriation bills now before Congress carry $100,000,000 in addition to the $40,000,000 authorized for this year.

According to reports of the REA, as of May 11, 1938, 379 contracts had been approved, involving loans of $87,199,129, to construct about 86,864 miles of rural lines to serve 260,806 customers, but at the end of 1937 only about 50,000 rural customers were being served on REA lines. Judging from electric utility experience, about two-thirds of these (or 33,000) would be farm customers. So that, despite huge appropriations, little tangible has been accomplished yet.

The REA, which at first loaned money only for the construction of lines, now includes loans for farmstead wiring and plumbing and for working capital for cooperatives, and has loaned money to build a few small generating plants. It is concerning itself also with operating the management problems of the cooperatives.

This year for the first time several cooperatives which have borrowed from the REA will be required to begin interest and amortization payments. Published statements of income and expenses of a number of these rural cooperatives indicate that operating expenses have absorbed most if not all of their revenue. One may therefore expect to see requests that interest and amortization payments be deferred and perhaps later adjusted downward. Such has been the history of past dealings of Congress with respect to the obligations of farmers on reclamation projects.

Rural Electrification in America and Abroad

It is the practice of some Government officials to disparage the progress of rural electrification in the United States, perhaps to justify Federal subsidies for rural electrification. Because misleading statements are repeated from time to time, I wish to state some facts showing America's leadership in rural electrification, a development which our industry pioneered.

The only published comprehensive statistics on farm electrification are for the United States and Canada. Information on farm electrification in other countries is based upon estimates, with a few actual figures for very limited areas. The published figures for foreign countries relate to total electrification, urban and rural combined, and not to farm electrification, and in general are based not upon the number of customers actually taking service but upon the families to whom service has allegedly been made available. In France, for example, villages within two miles of electric lines are reported as being "served" with electricity. Such a criterion would greatly increase all of our percentages.

In Continental Europe rural homes generally are congregated in closely knitted towns, the houses being joined together. The farms are small and the villages short distances apart. In Great Britain, where farms are isolated as in America, the percentage of farm electrification, as of the end of 1937, was estimated to be 7 per cent compared to our 20 per cent. The United States is a large country, with a relatively low average density of population, and in rural electrification should therefore be compared with similar situations like Canada, Russia, Europe as a whole, or Australia. It has a substantially higher average percentage than any of these. If comparisons are to be made with smaller, more compact countries like France, Norway and Sweden and especially Holland and Denmark, they should be with sections of the United States which are comparable in size and population density. On this basis, as to either electrified farms or total electrification, urban and rural, comparable areas in the United States will show higher percentages than similar areas in other parts of the world. This is true not only on the basis of availability of electric service, but especially if the basis is the number of families actually taking the service.

Merely being connected to electric lines is not, however, the final test of rural electrification; use enters as an important factor. The United States, with an average use per farm customer in excess of a thousand kilowatt hours a year, and a wide variety of farm applications of electricity, holds unquestioned leadership in farm electrification compared with any other country in the world, even with the dairying country of New Zealand. In European countries, judging from miscellaneous reports on consumption and on percentage of household appliances in use, farm consumptions of 200 to 300 kilowatt-hours per year are very general and uses of 25 to 50 kilowatt-hours per year are not uncommon.

I have no wish to belittle the efforts of foreign countries in carrying electricity to rural populations (undoubtedly they have troubles of their own to contend with) but in fairness to rural electrification in America I wish to point out how unjust and misleading have been the attacks on American progress in this field.

Diesel Engines

For many years we have had Diesel competition for much of our industrial and large commercial business. In spite of this competition we have witnessed enormous growth of industrial power sales. The production and sales of the "packaged Diesel unit" by General Motors means that this competition will now be extended to include smaller industrial customers and the larger field of medium sized commercial customers. We may expect increased competition for loads of from 10 to 100 horsepower, in which classification is found a considerable portion of our commercial and industrial customers. No significant change in the character of the Diesel engine itself has occurred recently, but the introduction of a company with extensive sales and servicing facilities, adds a new element in the competition. The intensity of this competition is likely to increase as other manufacturers endeavor to capitalize on the increase in Diesel publicity and advertising. Much of our industrial business has been retained largely as a result of a policy of frequently seeing the individual customer and pointing out to him the real and specific advantages of purchased power in his business. This will undoubtedly become sound business practice with our smaller commercial customers. Let us never forget that flexibility, reliability and convenience are still strong economic considerations for the American citizen in appraising any kind of service.

Adequate Wiring Program

Since the days when most of the buildings in which people live and work were first wired, electricity consumption in the average building has increased three-to-five-fold; but, except for the addition of a comparatively few electric range circuits and the like, no important addition has been made to the permanent wiring during all this time. For a great many years, since the rapid increase in the number and variety of household electric appliances, the expression "in-

adequate wiring" was used to signify too few and inconveniently located outlets. With the marked rise in lighting intensities and other building consumption, however, the term now has come to signify also inadequate conductor capacity. The need for radical improvement in this respect was recognized by the inauguration of the National Adequate Wiring Program, sponsored by the National Electrical Manufacturers Association and participated in by all branches of the industry. This program appears to be making good progress and the electric utilities generally are giving it full support. The rewiring of all the many types of existing buildings, and the adequate wiring of new buildings, obviously demand, however, the introduction of improvements in materials and methods in order to induce the building owner or tenant to provide himself with much needed wiring facilities.

The introduction of changes in interior wiring is not so simple as might appear: first, because electric wiring affects public safety, and rules governing its application are deeply imbedded in codes, ordinances and regulations; and second, because of the large number of interests concerned. The obstructions and hindrances to improvements in this field are so formidable, and progress has therefore been so slow, that many utility executives have grown tired of hearing about wiring codes and some have given up hope that the problem would ever be solved satisfactorily. During the past two years the Institute has made special efforts to find a way around some of the difficulties that have been holding up further advances, and, contrary to the general idea, substantial progress is being made. New wiring products, representing real advances, are making their appearance on the market and are being introduced to the trade; companies which for several years have been devoting time and effort to developing plans and working out arrangements with the local elements concerned, have gone a long way toward improving the wiring situation in their territories.

Last December the Institute formulated a number of specific proposals for changes in the wiring code which, if adopted and applied generally, must result in a very substantial improvement in wiring adequacy. There has been misunderstanding, particularly on the part of the electrical workers and electrical contractors, but also on the part of electrical inspectors, both as to our purpose in offering these proposed changes and also the effect of the proposals themselves. It has been alleged that the changes would reduce the amount of work for electrical workers. We are convinced that on the contrary our program for wiring improvements is bound to result in more work and more income for electrical workers and will greatly benefit all other parts of the industry, for it has proven so in a number of areas where these new wiring materials and methods have already been introduced. Electric consumers have long been painfully aware of the need for more interior wiring and when such installations can be offered on a more attractive basis, a substantial increase in wiring business must certainly follow. This will help everyone concerned, whether employer or employee.

Assuming you all agree as to the desirability of wiring improvements and of code changes to bring them about, I want to remind you of your responsibility in the matter. The task of your representatives on code-making bodies will be much simpler, and favorable action on their proposals will be expedited, if every electric utility in its own territory is alert to demonstrate the advantages of proposed amendments, and to apply them, insofar as it is able to obtain approval to do so from local enforcing authorities—if not in the larger cities then in the smaller ones which it serves. Code rules follow, they do not precede, practice. If each utility leaves it to others to do the pioneering work, progress is bound to be slow. Our industry, in my opinion, is deeply indebted to the Detroit Edison Company, to the American Gas and Electric Company and other such pioneering companies for the substantial progress that has been made in the past ten years in wiring practice and for the promise of much greater progress immediately before us.

Work of the Committees

During the past two years, it has been my duty and privilege to become better acquainted with the work of the Institute's standing committees, and I have been greatly impressed with the industry and capability of these bodies and the range of their well-directed efforts. It has made me appreciate the powerful influence committees are exerting in advancing the art of power supply and promoting the use of electric service. They perform one of the most valuable functions which your Institute fulfills. This year, in my opinion, their work has been outstanding and deserves the sincere approbation and gratitude of our entire membership.

In addition to the regular committee meetings, the Accounting, Engineering and Sales Committees have each established the practice of holding annual conferences at some central point, to which are invited not only the limited membership of the committees themselves but all members of the industry interested in these subjects. The conferences have come to have the significance and value of specialized conventions. At the Accounting Conference in Detroit last November about 350 attended. The Chicago Sales Conference in March drew an attendance of over 500, and the Engineering Conference held there in May was attended by about 250 engineers.

Each of the several committees renders important services for the membership of the Institute. The work of the Accounting Committees has been important, thorough and helpful in connection with the new standard system of accounts and the far-reaching problems arising thereunder. The Engineering Committees, which give their attention to both the current and the long range technical problems of the industry, perform work that has a tangible and important bearing on our capital expenditures, operating costs, sales and revenues. Not only do they deal with questions affecting our own plant but also consumers' utilization equipment, particularly as this affects the cost and operation of supply systems. Because of new developments in accounting, such questions as ratings of apparatus, depreciation and fixed capital accounts, which will require engineering interpretation, are requiring the cooperation of these committees, and I am sure that when the time arrives for engineering consideration of these questions a competent body of well informed professional opinion will be available.

The Sales Committees have continued their active study of matters which concern the commercial departments of operating companies. Studies have been made of financing methods for customers' electrical equipment, education and information for the consumer, selective selling plans, dealer coordination in local sales effort and the training of salesmen and dealers. Surveys have been made

The Convention Banquet, on Wednesday Evening, June 8.

of the field of electric cooking and water heating, and of the characteristics of the air conditioning load. A study of lower cost wiring and wiring methods has gone forward. The growing importance of the commercial customer has resulted in an examination of his special needs and better methods of approach toward further electrification. Competition in both the industrial and commercial fields has been a matter of careful study.

There never has been a time when the industry was better mobilized to make educational and promotional sales advances. The usability of electricity is being impressed upon people by joint effort of the four branches of our industry and by numerous other associations and groups which have joined us in gaining a common objective. There has been a change in the approach toward the sale of electric services. For example, lighting is not now a question of utility only, but a matter of eyesight preservation and better health. The architect, the builder and occupants of buildings are becoming impressed with an appreciation of the modernity of electrical equipment and the value of style in its use. Ensemble selling for the kitchen and the laundry makes the householder conscious of a complete unit of electrical equipment for these important work centers. Two of our national coordinated sales activities, namely, the Better Light-Better Sight Program and the Running Water Program for rural customers, are in their fifth year and are still making advances. The Modern Kitchen Program is the most comprehensive sales promotion plan ever undertaken by the industry and it is not surprising in view of these sales activities that domestic consumption continues to increase in spite of these months of economic stress.

Institute Activities

It is with distinct satisfaction that I can report on the detail activities of the Institute. The staff, under the direction of Mr. Weadock and Major Bennion, has continued to work with effectiveness throughout the year, keeping alertly in touch with every development having any effect on the industry. The volume, timeliness and interest of the data sent out to member companies and to other interested parties have been not only maintained, but greatly expanded during the past two years.

Regional Associations

The Institute itself does not, as did its predecessor organization, organize and operate regional groups, but the activities of such groups, locally organized and operated, are of much value to all the companies involved. Great as is its aggregate size, our industry is essentially a local enterprise everywhere, the average trip of a killowatt-hour from the cradle to the grave being but 26 miles. The many local problems can best be discussed by and at regional meetings. There are 22 such state or regional associations in the country that have held conventions this year. Besides the information and experience they disseminate, they are a most useful place for the meeting of minds and the discovery of leadership among the younger members of our organization—the men who will be the guides of the industry in the future. To my mind it is healthier to have these organizations locally inspired and directed than it would be to have them mere branches of the Institute itself and run from New York.

The Spirit of Service

It has been for me an engrossing and inspiring task during the last two years to get about to all sections of the country to meet with the operating forces of our member companies. I have found them often bewildered and discouraged at the attitude of the Government toward our industry, but continuing to carry on loyally in devotion to the pub-

(*Continued on page* 270)

Cincinnati Gas & Electric Company Wins Charles A. Coffin Award

THE Cincinnati Gas & Electric Company was presented on June 8 with the Charles A. Coffin Award for 1937, the most highly prized award for which electric light and power companies can compete. The award, for a "distinguished contribution to the development of electric light and power for the convenience of the public and the benefit of the industry," was announced at the Convention Banquet by Mr. H. P. Liversidge, Chairman of the Prize Awards Committee of Edison Electric Institute, and presented to Mr. H. C. Blackwell, president of the Cincinnati company, by Judge C. W. Appleton, vice-president of the General Electric Company, representing the Charles A. Coffin Foundation.

In making the announcement, Mr. Liversidge said, in part: "The city that is served by the company winning the award this year experienced in 1937 the greatest flood in its history. Throughout the disaster and during its aftermath, this company displayed a degree of initiative and enterprise and a devotion to duty and to the ideals of public service that won to itself added public confidence and esteem and reflected credit upon the entire industry. The company has been able to achieve very low rates for its customers, and its accomplishments in trade and employee relations, in engineering, accounting, advertising and selling make a helpful contribution to the advancement of the electric industry."

Judges for the contest were Dr. Karl T. Compton, President of Massachusetts Institute of Technology, Mr. C. W. Kellogg, President of Edison Electric Institute, and Mr. Liversidge. In submitting the report of their decision, the judges said: "The company presents in a complete and painstaking fashion, evidence of its progressive, capable and successful handling of a great many phases of electric utility operations—accounting, engineering, operating, selling, advertising and publicity, rural electrification, safety promotion, employee relations, trade relations and customer relations."

In discussing the company's services during the 1937 flood, the judges declared that officials and employees of the company had displayed a devotion to duty and to the ideals of the public service that built up confidence and good will on the part of the Cincinnati public, and in general, enhanced public esteem for the initiative and efficiency of private enterprise. The company maintained, throughout the worst stages of the flood, a supply of electricity in the downtown section sufficient, with careful rationing, to supply the needs of the more important services. It expeditiously restored service as the flood receded and promptly undertook measures to safeguard its facilities against any recurring flood of similar magnitude. All through the flood, the company gave a full account of its operations to the public.

The company has improved the reliability of its service by an interconnecting system of generating stations, improvement of lightning protection of transformers and improved fusing and relaying of distribution circuits.

Other engineering improvements include the reconstruction of its generating stations to withstand a flood to the generator floor level. This is about seven feet above the 1937 flood. Several new substations were constructed and several others modified so as to operate at a higher flood level.

An oil filled cable circuit, eight and one-half miles long, one of the longest of its type in the world, was placed into service during 1937 to provide the Greater Cincinnati area with power supply facilities of greater capacity and improved reliability.

This award, which was established in 1922 by the General Electric Company as a tribute to the memory of the late Charles A. Coffin, founder of that company and one of the great leaders of the electric industry, each year goes to the company which has made a distinguished contribution to the development of electric light and power for the convenience of the public and for the benefit of the industry.

H. C. Blackwell, president of The Cincinnati Gas & Electric Company, receives the Coffin Award from Judge C. W. Appleton

Company Awards for Distinguished Accomplishments

IN addition to the Charles A. Coffin Medal, four other awards offered to electric light and power companies for distinguished accomplishment in several fields of activities were announced by Mr. Liversidge at the Convention Banquet, June 8.

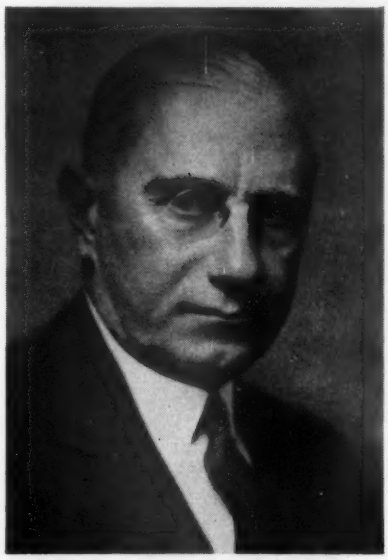
Tennessee Electric Power Wins Curtis Award

Tennessee Electric Power Company received the Augustus D. Curtis Award, as the public utility company which during the twelve months ending March 31, 1938, has shown the greatest contribution to the advancement of artificial illumination of interiors or exteriors of commercial and public buildings in the United States.

The award consists of a certificate donated by Messrs. Darwin and Kenneth Curtis, of Curtis Lighting, Inc., in memory of Augustus D. Curtis. It includes also three cash prizes of $300, $200 and $100 respectively, for individuals responsible for the achievements of the companies judged first, second and third in the contest.

The cash prize accompanying the award to Tennessee Electric Power Company was awarded to the manager of the company's Lighting Sales Department, Mr. Harry Curtis. Second cash prize was awarded to Mr. J. F. Gaskill of the Philadelphia Electric Company, and third prize to Mr. H. M. Crawford of Pacific Gas and Electric Company.

Judges were Messrs. S. R. McCandless, Howard C. Myers and Kenneth Magers. In giving their decision the judges pointed to the notable achievement of the Tennessee Electric Power Company in developing a comprehensive lighting sales activity for the betterment of lighting in commercial and public structures; a well-trained organization reinforced by effective advertising carried through a carefully planned sales activity which produced, during 1937, 638 kilowatts per salesman; and local coordination with manufacturing, electrical contracting, architectural and other building groups to promote greater lighting intensities and more artistically illuminated interiors of commercial and public buildings. Honorable Mention was awarded to the Public Service Company of Oklahoma, The Rochester Gas and Electric Corporation, and the Delaware Power and Light Company, all of which were close competitors in the contest.



H. P. LIVERSIDGE
Chairman, Prize Awards Committee, E.E.I.

Indiana General Service Company Receives Hughes Award

Indiana General Service Company of Marion, Indiana, was announced as the winner of the 1937 George A. Hughes Award for its outstanding accomplishment in promoting domestic electric cooking service.

As a result of the award, a check for $500 was presented to Mr. Arnold Hogan, assistant general manager of Indiana General Service Company, as the individual responsible for the company's achievement, and another $500 will be shared by members of the Residential Sales Department of the company for their part in the achievement.

The judges, Messrs. Ralph H. Jones, Frank E. Watts and Dr. Hugh E. Agnew, in their report, commended the sales promotion plans of the winner and the advertising and creative sales work carried through in executing them. Sales training, the provision of adequate consumer information and solicitation and the coordinated assistance of other electrical groups were a part of a well-rounded program which resulted in the sale of 46 ranges per 1,000 customers, and an increase in range saturation from 11 per cent at the beginning of 1937 to 16 per cent at the end of the year.

For honorable mention the judges nominated the Gulf Power Company and the Hartford Electric Light Company.

Consumers Power Company Awarded Martin Plaque

A bronze plaque was awarded to Consumers Power Company of Jackson, Michigan, as the utility company showing the greatest contribution to the advancement of rural electrification in the United States during 1937. The donor of the plaque, a trophy offered annually, is Mr. Thomas W. Martin, President of Alabama Power Company. The judges were Mr. Philip S. Rose, Dr. E. A. White, and Mr. George W. Kable.

Consumers Power Company received the award on the basis of its comprehensive plan for rural load development, for the large increase in the number of customers served and in the use per customer it attained, and for its broad contribution to rural development within the territories served.

In comparing the entries the judges found an increased interest in the award evidenced by the largest number of contestants in recent years. Honorable mention was awarded to the Central Hudson Gas and Electric Corporation, Poughkeepsie, N. Y.

Florida Power Corporation Wins Water Heating Council Award

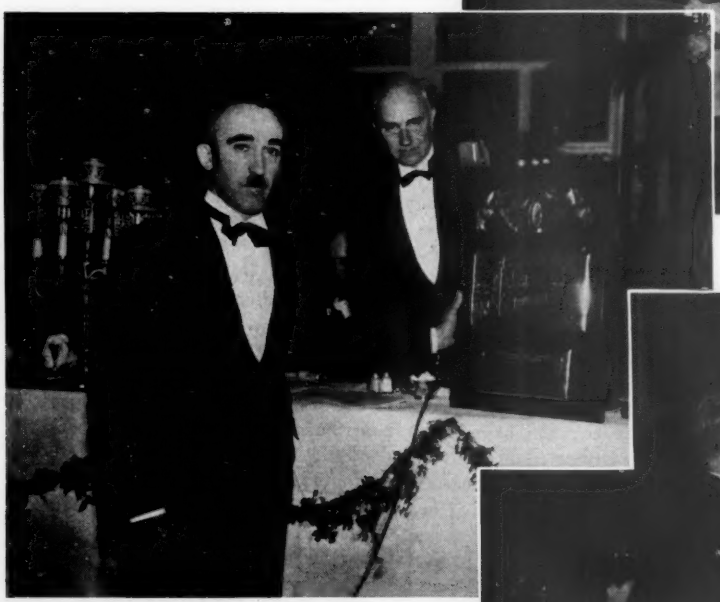
Florida Power Corporation, St. Petersburg, was announced as winner of the cup offered by the National Electric Water Heating Council for the greatest contribution to the development of the domestic electric water heating load during 1937. With the cup goes a cash award of $1,000 to individuals in the company responsible for the accomplishment.

Of this cash award, $500 was awarded to Mr. R. H. Giedd, sales manager of Florida Power Corporation, and the remainder is to be divided among the retail sales directors and retail salesmen, according to the terms of the contest. Judges were Messrs. E. N. Kobab, F. E. Watts and H. G. Dooley.

Mr. A. W. Higgins, President of Florida Power Corporation, received the cup from Mr. A. E. Julian of the National Electric Water Heating Council.

Left—Harry Curtis, Manager, Lighting Sales Department, Tennessee Electric Power Company, receives the Curtis Award from Darwin Curtis.

Below—George A. Hughes presents checks supplementing the Hughes Trophy won by the Indiana General Service Company to E. J. Kirkpatrick and Arnold Hogan of that company.



Above — H. J. Gallagher, Consumers Power Company, with H. P. Liversidge, Chairman, E.E.I. Prize Awards Committee, holds the Thomas W. Martin Rural Electrification Award won this year by his company.

Right—A. W. Higgins, President, Florida Power Corporation, receives the National Electric Water Heating Council Trophy from A. E. Julian of the Council.

Prizes to Individuals Awarded at the Convention

AWARDS of five groups of prizes to members of the electrical industry for papers on various phases of the industry were made June 9 at the Sixth Annual Convention of the Edison Electric Institute. The awards, competed for by employees of utility companies throughout the United States and Canada, were announced by Mr. H. P. Liversidge, Chairman of the Institute's Prize Award Committee. Mr. Liversidge also announced the establishment of two new prizes which will be awarded for the first time next year.

The Prizes were as follows:

THE H. M. BYLLESBY PRIZES

Three cash prizes, one of $100, one of $50, and one of $25, donated by the Public Utility Engineering and Service Corporation in memory of Colonel H. M. Byllesby, for the three most meritorious papers on any accounting subject relating to the electric light and power industry. The judges for this award were Dean John T. Madden, Mr. B. J. Braheney and Mr. W. Paxton Little.

First prize was awarded to Mr. A. C. Herron of the Florida Power Corporation for his paper entitled "Electric Fixed Capital Accounting By Units of Property, As Required by Federal and State Power Commissions and How It May Be Accomplished."

Second prize went to Mr. C. A. McKenna of Wisconsin Public Service Corporation for his paper entitled "Problems and Suggested Solutions Relating to the Electric Plant Acquisition Adjustment Account."

EDMOND A. CASEY
Forbes Prize Winner

Third prize was awarded to Mr. W. L. Squire of Buffalo Niagara Electric Corporation for his paper entitled "The Organization of the Property Record Department."

Honorable mention was given to Mr. Wm. Frank Robinson of Kansas Power & Light Company for his paper entitled "Depreciation and Retirement Reserve Theories of Accounting for Electric and Gas Utilities."

THE B. C. FORBES PRIZE

A cash award of $250 donated by Mr. B. C. Forbes, Editor of Forbes Magazine, *for the most meritorious paper dealing with the subject of public relations in the electric light and power industry. The judges were Mr. J. F. Owens, Mr. D. C. Green and Mr. G. W. Van Derzee.*

This prize was awarded to Mr. Edmond A. Casey, West Penn Power Company, for his paper entitled "Public Relations in the Electric Light and Power Industry from the Inside Out."

The judges awarded Honorable Mention to Mr. Edward A. Bille, Mountain States Power Company, for his paper entitled "Utilities Can Make Friends," and to Mr. Walter J. Thompson, Buffalo Niagara and Eastern Power Corporation, for his paper entitled "Deeper than Statutes or Decisions."

THE A. L. LINDEMANN PRIZES

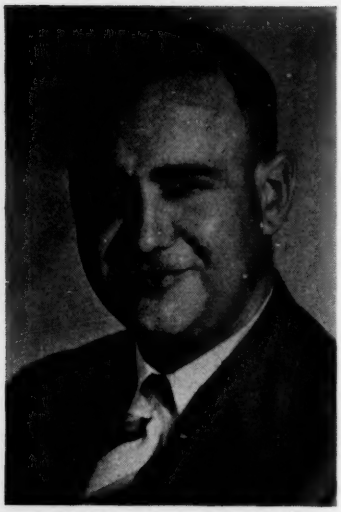
Three cash prizes, one of $150, one of $100 and one of $50 donated by Mr. A. L. Lindemann, President, A. J. Lindemann and Hoverson Company, for the three most meritorious papers dealing with the advantages of electric cookery for domestic purposes. The judges of this award were Mr. L. R. Moffatt, Miss Mildred A. Nichols and Miss Ada Bessie Swann.

A. C. HERRON

C. A. McKENNA

WALTER L. SQUIRE

H. M. Byllesby Prize Winners



GEORGE E. KELLEY

MISS CLARA ZILLESSEN

R. A. GIBSON

A. L. Lindemann Prize Winners

First prize was won by Miss Clara Zillessen of Philadelphia Electric Company for her paper entitled "A Business Woman-Homemaker Looks at the Electric Range."

Second prize was won by Mr. George E. Kelley of Portland General Electric Company, for his paper entitled "Is Electric Cookery Really Better?"

Third prize was won by Mr. R. A. Gibson of Hartford Electric Light Company for his paper entitled "The Advantages of Electric Cookery for Domestic Purposes."

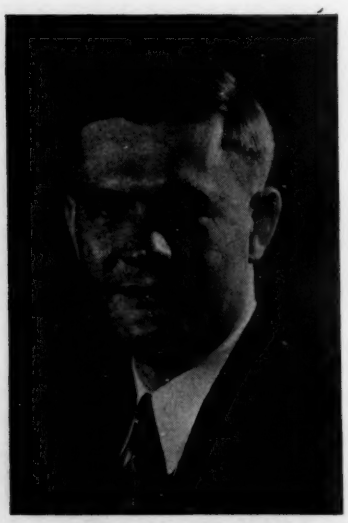
For Honorable Mention the judges nominated Miss Virginia J. Watkins of the West Penn Power Company, Mr. Alfred M. Wade of the Connecticut Light and Power Company and Miss Wenonah McGhee of Consumers Power Company.

THE JAMES H. McGRAW PRIZES

Three cash prizes, one of $250, one of $150 and one of $100 donated by Mr. James H. McGraw, Honorary Chairman of McGraw-Hill Publishing Company, for the three most meritorious papers on any engineering or technical subject relating to the electric light and power industry. The judges for this award were Messrs. John C. Parker, J. T. Barron and Professor W. I. Slichter.

First prize was awarded to Mr. Harold E. Deardorff of the Dayton Power & Light Company for his paper entitled "The Gathering and Evaluation of Data for Improving 4 KV Distribution System Operation."

Second prize was awarded to Messrs. S. Goldsmith and R. M. Seitz of Cincinnati Gas & Electric Company for their paper entitled "A New Technique in



HAROLD E. DEARDORFF

S. GOLDSMITH

R. M. SEITZ

James H. McGraw Prize Winners

E. A. BRAND
Modern Kitchen Bureau Prize Winner

C. D. REID
McGraw Prize Winner

C. M. TURNER
Modern Kitchen Bureau Prize Winner

the Maintenance of Oil Circuit Breakers."

Third prize was awarded to Mr. C. D. Reid of Oklahoma Gas and Electric Company for his paper entitled "Staybolt Replacement."

MODERN KITCHEN BUREAU PRIZES

Cash prizes of $500 each were awarded to Mr. C. M. Turner, Ebasco Services, Inc., New York, and Mr. E. A. Brand, Buffalo, Niagara & Eastern Power Corporation, Buffalo, N. Y., in the Executives and Engineers Contest sponsored as a part of its electric water heater program by The Modern Kitchen Bureau.

These prizes were offered for the best two papers on the subject: "Advisability of a Water Heater Rate and Advantages of a Water Heater Load." A number of exceptionally fine papers were entered, making the decision of the judges particularly difficult. Judges were Messrs. Page Golson, William S. Leffler and Henry G. Dooley.

NEW AWARDS ANNOUNCED

In making his report to the convention, Mr. Liversidge said:

"A total of 204 papers were submitted this year by employees of 78 companies in 29 states and Canada. 106 of these papers were submitted in competition for the B. C. Forbes Prize.

"Your Committee is pleased to report that next year there will be added the R. B. Marshall Award, offered through the courtesy of Mr. R. B. Marshall, President of Electromaster, Incorporated, which provides five prizes of $100 each for individual sales achievement in electric range sales during the calendar year 1938.

"Your attention is directed also to the establishment of the Claude L. Matthews Valor Awards for acts of valor performed during the calendar year 1938. Three cash awards, each of $150, are offered, accompanied by a Citation and a Pin. Others recommended for the Valor Award but not participating in the cash awards may, at the discretion of the judges, be given a Citation and awarded the Pin. It is the hope of your Committee that company executives will be alert to recommend for this recognition the valorous acts of their employees. This award is offered through the interest of Mr. Claude L. Matthews, vice-president and general manager, W. N. Matthews Corporation. This award will also be operative during the calendar years 1939 and 1940.

EDISON ELECTRIC INSTITUTE MEDAL

Continuing his report, Mr. Liversidge said, "I wish to take this opportunity to report on the Edison Electric Institute Medal which is awarded in recognition of the successful resuscitation of individuals suffering from electric shock and to maintain and encourage interest in the training of employees in the use of the Schafer Prone Pressure Method of Resuscitation for the saving of life. There have been 14 Institute Medals awarded to employees of member companies for saving of lives since the announcement made at last year's Convention. The total number since the inception of the Medal in January, 1933, is 69 Medals. The awarding of Medals is administered by a committee of judges comprising Mr. E. W. Gorry, Chairman, Mr. C. R. Beardsley, Mr. Wills Maclachlan and Miss M. B. Woods, Secretary.

"In conclusion, the Committee desires to express its appreciation to the donors for their generosity in offering these awards and to thank them for their presence at the Convention to present the awards to the winners. The Committee wishes also to thank the company executives for arranging for the attendance here of the winners of the prizes. On behalf of the Prize Awards Committee, I congratulate the winners of this year's prizes for the well merited recognition they have received."

Convention Resolution

WHEREAS, the Annual Convention of the Edison Electric Institute has been made pleasant and enjoyable to all the delegates and their guests by the capable, thorough and courteous arrangements of the Atlantic City Electric Company,

BE IT RESOLVED, that the Edison Electric Institute express its thanks and appreciation to the Atlantic City Electric Company, to Mr. E. A. Lewis, Vice-President and General Manager of that Company, under whose direction the arrangements have been made, to Mr. R. E. Swift, Assistant to the Vice-President of that company, and to the Entertainment Committee.

Power Sales and Profits

By W. H. Sammis

Vice-President, Commonwealth and Southern Corp., New York, N. Y.

An Address before the First General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7th, 1938

A STUDY of the remarkable growth of the electric utility industry reveals some serious problems. Increases in gross revenues no longer bring corresponding increases in net income and the earning power of invested capital is showing a steady decline due largely to increased taxes, wages and other costs. For the year 1937 the electric light and power companies, as reported by the Edison Electric Institute, received gross revenues of $2,055,000,000. This produced an operating income (after depreciation but before interest payments) of $727,000,000. So far this year the companies, as reported by Moody's Manual, have shown a decrease in operating income of about 10 per cent, indicating for the year 1938 as a whole an operating income of about $654,000,000. The U. S. Census of 1927 shows for that year an operating income from electric operations of $645,668,531. Operating income of the electric light and power industry is thus practically back where it was eleven years ago, although in the meantime between four and five billion dollars have been invested in additional plant and equipment.

Sales to commercial and industrial customers in 1937 accounted for 72 per cent of the total kilowatt-hour sales and 56 per cent of the total revenue of the electric utilities, or approximately one and one-quarter billions of dollars per year. This amount of business deserves and requires very close attention, particularly when we realize that it is largely competitive.

In the time allotted me, I would like to cover briefly the present status of electrification in industry, the prospects for greater sales to industry, the charges for utility service and selling to accomplish a greater return per dollar of plant investment.

A decade ago a considerable proportion of the sale of power came from the replacement of isolated power plants. A pretty good job has been done along this line, for although we have no definite figures as to the percentage of the industry that purchased power serves, the U. S. Census of manufacturers in 1929

MR. SAMMIS

stated that 76 per cent of all electric motors in the country were served by purchased power. If later figures were available this percentage would undoubtedly be appreciably higher. However, even though this excellent job has been accomplished, it is an ever-continuing job to keep industry using purchased power, as our competitors, the manufacturers of isolated plant equipment, are actively promoting their products. The present-day cost of producing kilowatt-hours from steam turbine or reciprocating engine isolated plants, including Fixed Charges and Operating Expenses, runs, in medium sized plants, from 30 per cent to 40 per cent lower than the cost that existed in the early '20's. This large reduction has been brought about by the progress that has developed in operating boilers at higher ratings, in operating small turbines at higher speeds and steam pressures, and by various other economies in operation, such as superheaters and economizers. The manufacturers of Diesel engines have also been busy. Although the improvement in the efficiency of Diesels has not shown the same percentage improvement as has been encountered in boiler and steam turbine equipment, largely because the thermal efficiency of Diesels was always relatively high, the standardization of sizes and other improvements have brought about very material reductions in the price per kilowatt installed. The investment per kilowatt installed today is less than half that of the early '20s. During this period of rapid progress in isolated plant equipment, however, purchased power has made continuous gains.

The recent entrance of the General Motors Corporation in the Diesel field has brought reams of publicity predicting the revolutionary changes which Diesel Engines are going to bring to the automobile, to rail transportation and to the marine field, and this publicity has carried with it the inference that the utility field is also involved. We have successfully faced Diesel competition for years. The entrance of General Motors Corporation into the stationary field has not brought a radical change in the economics of our competition. However, this corporation with its usual great efficiency in producing and marketing a high-grade product will, in my opinion, create greater interest in the Diesel on the part of our customers. But, in the words of Mr. R. K. Evans, Vice-President of the Corporation, "We will not mislead prospective customers, nor will we allow our dealers to do so." Mr. Evans' statement means honest competition and our industry does not fear this new competition on such a basis. Nevertheless, this new interest is already being experienced with the result that Diesel manufacturers are attempting to capitalize the situation and their salesmen have become more aggressive. A certain case which has just been reported to me is an example of the extremes to which some manufacturers will go to get an initial plant in new territory. In substance, the following promises and guarantees, in addition to the usual fuel oil guarantee, were among the many made to this particular customer:

(a) Installation with no down payment to be made for a 90-day trial period at the engine company's expense.

(b) Satisfaction is guaranteed during the trial period, and if there is any objectionable noise, odor or vibration the engine will be removed at the engine company's expense.

(c) The unit is guaranteed to operate during the trial period without the services

of an engineer and, if it is found an engineer is required even after the trial period, the customer may cancel the contract.

It should be kept in mind that any location is "new territory" for most of the fifty-odd Diesel engine builders.

In addition to replacing the isolated power plant in industry, electric power has found many other fields of application. Industrial heating successfully and economically did not appear in any material volume until the War, and then it was primarily utilized in the metal industries. Today it has extended to practically every industry, even into the food industry for puffing wheat and rice and into the agricultural industry for soil heating, and is used for such delicate operations as branding fragile textiles and cellophane. In spite of the general competition with other fuels, the growth of the industrial heating load has been almost phenomenal. There are no figures of the amount of such load served by the utilities in total, but based upon certain figures I have obtained, I estimate that over five million kilowatts of industrial heating equipment have been sold by the various manufacturers.

The use of electricity for commercial cooking, also a competitive field, has been growing steadily, and at the present time, based upon surveys, there is about 600,000 kw of this load connected. According to figures compiled by the Commercial Electric Cooking Council for the year 1937, operating companies representing about one-half the commercial meters served by the industry gained 63,500 kw of electric commercial cooking equipment, estimated to bring these utilities $1,600,000 per year, or at the rate of $25 per kw connected. This Council also estimates that there is a potential business of approximately 1 kw of counter equipment load for every family in every urban community. Experience indicates that a full-time salesman can be profitably employed to promote this load for every 7500 commercial meters and he will produce about $10,000 additional revenue per year.

Air conditioning recently has been the subject of much discussion. Some utility commercial men are strong boosters for this load but others have the feeling that it is not a profitable load. Regardless of our individual thoughts, however, at the present time there is already installed about 900,000 hp of equipment and there is a large potential market. Industry's need for conditioned air and the public's demand for its adoption in the merchant's place of business will cause its growth regardless of our attitude. My opinion is that each utility should recognize its potentialities, investigate the effect of this load on its system and adjust, if necessary, its rate schedules for such service.

The newcomer to the fold as a potential user of power is the Chemurgic Movement. It is based upon the concept that new wealth can be created out of the soil which can be utilized by industry and turned into inedible and nonwearable products which are used by the American people. For instance, in the South woodpulp is being produced for kraft papers and rayon. In Kansas, corn and grain sorghums are being processed into anhydrous ethyl alcohol, which, when blended with gasoline, produces a new fuel for use in automobiles. In Mississippi, a new factory is making starch of the highest quality from sweet potatoes. If you are not familiar with Chemurgy, I recommend that you read the address of Wheeler McMillen, President of the National Farm Chemurgic Council, given before the recent Annual Sales Conference of the E.E.I. at Chicago, and printed in the April E.E.I. BULLETIN.

Although one does not normally think of lighting in the same breath with power sales, the intensities of illumination are rapidly being increased in industry to provide increased production, fewer rejections, less spoilage and greater safety. In 1933 the Commercial and Industrial Lighting Committee of the E.E.I. conducted a nation-wide survey of 1900 industrial plants located in 182 cities. This survey disclosed that the average intensity existing was 2.85 foot candles. The difference between this average and the industrial illumination standards of the Illuminating Engineering Society indicates that there exists an immediate potential revenue for the utilities of over $230,000,000 per year. The ultimate market challenges the imagination as lighting intensities far in excess of the recommended minimum standards are being demanded by industrialists who have been shown real savings in overall production costs, increased production, better product, and fewer accidents. Surveys in many factories indicate that one-half of the industrial employees have defective vision. Some have aid from glasses—others are not aware of visual defects. In any case, adequate illumination benefits the normal eye and to a greater extent the sub-normal eye. Tests have shown that raising the level of illumination from 3 to 12 foot candles, a level still considered below good practice, increased the speed of workers with normal eyes 14 per cent, and that of workers with sub-normal eyes 23 per cent. Dr. LeGrand H. Hardy, eminent authority in the medical field, stated in an address before the Greater New York Safety Conference—"It is estimated that we are losing the services of 125,000 men annually through accidents due to poor lighting. These terms have been translated into dollars as follows: if only 15 per cent of industrial accidents are caused by poor lighting, the annual toll is $150,000,000."

In view of these many uses of electricity in industry, one can confidently say no industry is completely electrified. The need for and value of complete surveys of prospective industrial business is clearly demonstrated in the experience of two companies located in the Middle Atlantic and Mid-West areas. One of these companies, before making a complete survey, had a list of 47 prospects for a potential load of 3400 kw and an estimated annual revenue of $84,000. When the complete survey was made, the resulting list contained 188 prospects for a potential load of 20,600 kw and an estimated annual revenue of $513,000. The other company had been using a list showing 66 prospects for a potential load of 7700 kw. When the complete survey was made the resulting list contained 323 prospects for a total load of 32,000 kw. In both of these instances you will note that the actual prospective business was many times that which the company had thought, from more or less superficial surveys, was available in the territory. A recent survey of the growth of industrial power in the Detroit area revealed that the kilowatt-hours used per man employed in the factories had increased from 4,000 kwhr per man in 1920 to 11,000 kwhr per man in 1937.

Having analyzed our industrial market to some extent, I would like to discuss the charges for electric service for this class of business. For years we have designed our rate schedules, taking into consideration the size of the load, the load factor and the power factor, recognizing competitive costs of other forms of power and the diversity among power loads and with the residential load. The revenue per kilowatt-hour for large light and power customers has decreased during the past ten years from 1.46c to 1.17c. per kilowatt-hour for the industry as a whole, a record of which we can well be proud. In recent years, how-

ever, rapidly changing and fluctuating business conditions necessitate our checking more closely the protection of our investment to serve these loads, in view of the fact that we are a regulated industry and cannot build up surpluses in times of prosperity to tide us over the leaner years. The largest operating company of the system with which I am associated suffered a decline in industrial sales from 1928 to 1932 of 39 per cent. This same company's industrial sales has fallen a slightly greater percentage, that is, 40 per cent from October of last year to February of this year. A smaller company of the system showed a drop of 55 per cent from 1929 to 1932 and a 47 per cent drop September of last year to January of this year. Such rapid declines necessitate that our rate schedules incorporate adequate charges to protect the investment required to serve these customers. These charges are necessary for our protection and are entirely competitive with the isolated plant. We cannot justify modifying our position in this regard.

In connection with oil engine competition, it is not unusual for our customers to install a single oil engine unit and retain a connection with the utility for breakdown service. Unless our rate schedules, rules and regulations for small as well as large power customers are properly designed and applied we will find ourselves aiding our competitors. I suggest that you examine your rate schedules, rules and regulations to determine if here again you have provided reasonable protection against this situation.

During the past few years there have arisen two additional factors which must be considered. First, increased taxes, some of which are specific and we never know what new tax will be devised and levied by our City, State or Federal Government; and second, the attempted control of the price of coal under the Bituminous Coal Act. These factors are beyond our control and it behooves us to give consideration to the incorporation of tax clauses and coal clauses in the rate schedules on which we do this large amount of business.

The matter of selling power is becoming more and more specialized. Going back again to the early '20s, if the power salesman had a good engineering background, a little knowledge of steam engine generator plants and was a fairly good mixer he got along pretty well. Today, however, conditions are entirely different and our sales organization must be diversified. Our sales organization must include well qualified power salesmen with a broad outlook, who know and can evaluate the many collateral advantages of purchased power, and can recognize the specific applications for electrification in the various industries served. This type of man, however, must have the assistance of the engineers who are specialists in the details of the involved high-pressure, high-temperature bleeder type turbine plants, which is our competition with the large customers. Further, the sales organization must have available specialists who can be of real assistance to the customers in the other uses of power, such as industrial heating, air conditioning, commercial cooking and industrial lighting, previously mentioned. These men will, of course, be able to obtain material assistance from the manufacturers of equipment along these lines and in the smaller companies it may be necessary to depend to a greater extent on manufacturers for this specialized knowledge. It is becoming increasingly necessary to not only call on the large power customers periodically, but to contact the medium sized and many of the smaller customers, and there is an excellent opportunity with a little forethought on the part of the salesman prior to the call to make this call not merely perfunctory, but a sales call. The salesman should at all times be promoting aggressively the specific applications where electricity can be used to advantage in the specific plant where he calls, in addition to assisting a customer with his motor, transformer and wiring problems. I am fearful, particularly during depressed times, that our salesmen have been too prone to simply call and not take advantage of the selling opportunities that are available.

There is no question but that direct contact with the customer brings the best sales results. To supplement the direct contacts with the customer, publicity and advertising of various sorts are helpful, and in the case of the smaller customer where frequent direct contact is almost prohibitive from the standpoint of selling expense it may be practically the entire contact we have with the customer. The manufacturers have available considerable material that can be sent to the customers by direct mail and the utility's name, in many instances, can be imprinted if desired. A number of utilities prepare their own periodicals. In addition, there are two excellent magazines, *Timely Ideas* and *Electrified Industry* that are being published for the sole purpose of stimulating customer interest in the electrification of specific processes.

There is one further approach which I believe we have overlooked. That is the approach directly to the directors of the industrial. To this end a definite movement was started, about a year ago, to embark upon a so-called National Power Sales Publicity Program. This program contemplated advertising the many advantages of purchased power to industry in national magazines whose circulation reaches such individuals. The success of the Petroleum Electric Power Club's advertising the advantages of purchased power in the oil industry which was financed by the utilities in the Southwest lent considerable encouragement to this program. About 25 per cent of the utility industry agreed to go along with this movement. There was real enthusiasm on the part of another large percentage of the industry, which, however, did not desire to spend the money in this time of receding business. As a result, the program is being held in abeyance temporarily and will be revived as soon as sentiment improves.

With conditions as they are today, in that it is difficult to obtain junior money for expansion, a most important factor, in my opinion, is what might be called "Selective Selling." By "Selective Selling" is meant selling that load which is most profitable to the utility. Successful "Selective Selling" does not mean restricting sales effort, but rather placing the emphasis on those applications which mean the most net revenue. In power sales this can be brought about by concentrating on sales that improve the system load factor or make use of the utility's existing facilities to the greatest extent. The first step in such a program is the careful analysis of load conditions not only for the system as a whole but also for the various areas and circuits. The next step is a thorough survey of the potential uses of electricity of each power customer. These two studies will serve as a basis for the establishment of sales plans and programs which will place the emphasis on the particular types or locations of potential loads which the company can most economically add and will thus produce the greatest net revenue per dollar of investment.

In conclusion, I would like to leave with you a few thoughts:

(*Continued on page* 270)

Stones for David's Sling

By H. S. Metcalfe

Director of Public Relations, West Penn Power Company, Pittsburgh, Pennsylvania

An Address before the First General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1938

FIVE pebbles to slay Goliath! Of course, it's a familiar story. The red-haired shepherd lad, potential deliverer of his people, faced the mighty spokesman of the Philistines. After hearing the bragging threats, David accepted the challenge, calmly picked out five smooth stones from the nearby brook and, with deliberate aim, used his sling to lay his adversary low. With the downfall of Goliath, the hopes of those he represented also died.

Goliath is a symbol of the adverse ideas of his particular group; David and his five stones with which he successfully overcame the adversaries of his people, is a symbol of an obstacle remover. It was a case of overcoming one set of ideas with another.

American business in general, and our industry in particular, likewise faces obstacles. There are three Philistine conditions which confront business; unfriendly attitudes; the new era of questioning; and the tyranny of words.

There are five stones for David's sling which can meet and overcome these conditions. They are—friendliness, logic, and three kinds of facts—facts about our industry, facts about what people think, and facts about economics.

Not only do individual utilities need to have these projectiles available, but each company needs to have a central firing control station to give David the proper corrections for range and deflection as required by modern gunnery.

Let us explain these three Philistine situations and our five stones by means of a parable:

A utility representative, in the regular course of his business, calls upon the editor of a daily paper in one of the communities his company serves. His errand is the placing of advertising for a proposed campaign on electric ranges. The details of the advertising have been discussed with the paper's business manager, and the editor's support and enthusiasm for the general activity is being sought. The program affects a dozen important electrical dealers in the community and is a step in advancing the living standards of the city.

That phase of the business satisfactorily concluded, Mr. Editor sits back in his chair and discusses affairs in general. Presently the two of them are discussing the attitudes of the public toward the utility business. As the result of a lengthy, face to face, off the record conversation, it is apparent that the editor's personal views, and the views he attributes to the public, differ from those of the utility men.

MR. METCALFE

The discussion reveals three general situations which tend to complicate the utility's public relations problems.

I. Obstacles

A. *Unfriendy Attitudes.*

Our editor indicates first, that apart from the comparatively few difficult situations which grow out of bad employee contacts, unsatisfactory service, or rates, unfriendly attitudes may arise from any one of numerous false conceptions about business in general. It may be the idea that business is a device which operates at the expense of the many for the benefit of the few; that the machine age is driving men into idleness; that the big salaries of executives come out of the pocket of the little fellow; that bigness is synonymous with badness; that human rights are always violated at the expense of property rights; or that public utilities are not sufficiently regulated.

This editor is not *necessarily* reflecting his own opinions, but endeavoring to picture opinion as he senses it among an important sector of his public. Further discussion reveals that these attitudes have been built over a period of time partly because of bad business practices in the past, and partly because of skillful propaganda. There is, moreover, reflected in the editor's comments the fact that the movements for social betterment frequently ignore the realities of economics.

B. *More Questioners.*

Our editor also points out that we are now in a new era of questioning. Many people today have gained greater confidence in their own judgment. We are aware of the larger output of our institutions of higher learning; the tremendously increased enrollment in adult education groups; the multiplying of public forums with their "give and take" in open discussion; the town meetings of the air; the round tables by radio; and the syndicated columnists who are represented in every newspaper of the country. It is, therefore, not surprising to conclude that there is being built up a body of public opinion which considers itself thoroughly capable of assembling information, analyzing it and coming to an intelligent decision on the merits of any question. Whether they are as capable as they think of coming to a sound conclusion is a matter open to question; the important thing here is that *they think they are.*

C. *The Tyranny of Words.*

The editor also reminds us that certain words which we use in explaining ourselves mean different things to the public than to us. He mentions Stuart Chase's recent book "The Tyranny of Words." For instance, the very term "Public Utility," because of unremitting cartoon treatment in the public press, brings into a large sector of the public mind the figure of a bloated individual, loudly dressed, with an undistributed middle, vest cross-hatched with dollar signs, whose face with an expansive smile serves largely as a chimney for a big cigar. The term "Rates" is all too definite a reminder of a monthly bill

which, to many, is still an electric "light" bill coming from an octopus of a monopoly, outrageous in its charges. "Public Relations," when applied to a utility company, is in bad odor in many circles where such activities are visualized as conscienceless propaganda promoted to fool the public by feeding them sugar-coated half-truths or downright lies. On the other hand, a governmentally established "yardstick" may be publicly evaluated as sound, while to us it may have a false element of elasticity.

Words like these which we so frequently use are in need of careful study. What they mean to the public is of tremendous importance, and as false ideas are fashioned, we must either develop a different and sounder vocabulary or educate the public mind to a fair interpretation of the real meaning of these exploited words.

On leaving the editor's office, the utility man is more keenly aware than ever of the existence of these obstacles, their influence upon public opinion, and the importance of finding ways and means to overcome them.

II. Obstacle Removers

What ammunition does a utility man need to overcome these obstacles which exist in the editor's mind, and apparently also in the minds of many of his readers? We suggest, as in David's case, that there are five stones easily available which can well be used to attack this problem.

A. *Friendliness.*

The first stone is labelled friendliness. There is no record that any business ever damaged itself by being genial, or ever suffered a loss of prestige by speaking from the exact level of its customers. People still like to do business with friends and find friendship a vital force in persuasion, because friendliness is just another word for the confidence that people have in those they know. It is the opposite of their distrust for strangers.

The utilities are today, and have been for many years, carrying on their personal relations with their customers in the spirit of friendliness. Their meter readers are courteous; the bill clerks in the offices are friendly and human. Employees incapable of making pleasant customer contacts have long ago been removed to non-contact work. There is some question, however, whether this attitude of friendliness has permeated utility advertising and publicity as thoroughly as it has personal contacts with customers.

Advertising is the product of hard thinking and of clear-headed planning. It starts from a study of what people want and why they want it. It must be a sympathetic reflection of the human aspirations which the service fulfills and a recognition of the benefits which it must perform in relation to the customer.

The traditional coldness of formal statements interferes with the development of that friendly spirit which a utility desires to share with all its customers. Every printed statement the company releases must, by its very tone, make clear a constant willingness to discuss any phase of its problems with the public it serves.

B. *Facts.*

There are three stones in David's bag which represent three different kinds of facts: industry facts; facts as to what people think; and economic facts.

1. *Industry Facts.*

While editors and the public generally have been exposed to many opinions about the utility industry, there has been a dearth in the distribution of concrete facts. The mere release of information about rates, earnings, kwhr outputs, and an occasional institutional advertisement is not news. As usually publicized, these are cold and bloodless. It is no wonder that whatever favorable information may be in these statements is rarely read because of the method of its presentation.

Let us take full responsibility for presenting these facts in such an interesting manner, and with words that reflect the human qualities of the company, so that they will be read and be influences for good wherever they go. Statistics themselves are uninteresting to most people, but statistics can be given tremendous vitality if their significance is pointed out, and if they are told as an interesting story. That business is conscious of this need for humanizing formal statements is evidenced in the increasing endeavor by large corporations to relate income and sales to wages, man output and employe benefits.

Valuable also is the growing effort to humanize and popularize the advertising appeals of the industry by such devices as Reddy Kilowatt, who is one-third stronger than a horse and works by the hour for low wages.

Whoever has contacts with newspapers needs to have, at his finger-tips, all the vital facts about his own company and industry.

2. *What People Think.*

Facts about what people think are also a stone for David's sling.

There is good reason to believe that the great mass of the public is not unfriendly toward utilities or toward efficient big business units of any kind. For example:

One of the most popular of radio features is Mr. W. J. Cameron's weekly talk on the Ford Hour. Millions who will attend the World's Fair are interested in the advances of industry, in discoveries in electricity and chemistry, in new materials, in new phases of making things—in everything and anything industry is doing for the public's benefit. The public senses that the most important thing about industry is how adequately it serves America. Public opinion will probably never condemn or punish a company for being big enough to do its job, for it is proud of any industrial organization that is strong and able enough to serve the country adequately.

When there arises, therefore, in the minds of a utility staff meeting a real question about the attitude of the public toward a certain policy of the company, it is entirely possible to go to the public and find out what the attitude is.

Too often company officials, like newspaper editors, have preconceived notions as to what people actually do think. Fortunately, there has been developed a good technique for the discovery of public attitudes. There is Dr. Gallup's American Institute of Public Opinion; the well known surveys of public attitudes made by *Fortune* magazine; and recently we have seen a development of the Gallup method by the editors of the *Ladies' Home Journal.*

The development of these sampling surveys of public opinion offers valuable suggestions to modern business in its approach to this phase of its public relations problem.

One company secured through J. David Houser, whose recently published book, "What People Want From Business" has created widespread interest, a fairly definite answer to several questions regarding attitudes of customers toward company policies.

In another survey, a utility discovered that it is very highly esteemed by all classes of customers insofar as the excellence of its service and the fairness of its rates is concerned—even its critics were complimentary on such points.

A small sampling of public opinion, fairly and expertly done, indicates the

actual situation infinitely better than theorizing about what the public believes.

The customer surveys indicate, in the main, five attitude groups of varying size, with respect to utility rates, earnings and policies. Two extremes are those who are violently pro and violently con; toward the center are those who are mildly pro and mildly con; and in the middle are those who do not know or are indifferent.

In using advertising and publicity to change public opinion, the violently pro and violently con group can be dismissed from consideration. Arguments and facts need to be presented to interest the three other groups who hold the balance of power. These three will be impressed with the same friendly presentation of facts and arguments if they are definitely aimed to meet problems revealed by a sampling survey.

3. *Economic Facts.*

Today is a period of intense interest in economic discussion. Well informed, thoughtful men frequently throw up their hands and confess themselves at a loss in understanding the interplay of economic forces at work today in our complicated civilization. It seems important for those of us in the utility business, who have contact with the molders and makers of opinion, to have a few basic convictions in regard to economic truths affecting our industry, and facts and persuasive arguments to support them.

The statement that there is little difference in the social ideals of the "conservative" and the "liberal" hardly needs repetition here. The fundamental difference is that the "conservative" believes that economics in the long run must control the social well-being of the country, while the extreme "liberal" tends to believe that economics must bow to the social aspirations of the idealist. We must be willing to discuss these basic matters with our public whenever the occasion arises. Such questions as these occur. What are the causes of national wealth? What are the economic channels for the equitable distribution of wealth in use? What is the economic status of private investment in the creation of new wealth and greater comforts? These and scores of similar problems are the theme of friendly discussions today.

The willingness of utility men to discuss such fundamentals with editors and curious-minded people anywhere is one indication of their friendliness and cooperative attitude in solving the problems of public relations that are of equal concern both to public and stockholders.

C. *Logic.*

The fifth stone for David's sling is that of logic; the organizing of these facts to determine sound conclusions. We must also be able to check the attitudes and opinions of adverse critics. We must know our major and minor premises and be alert and able to expose fallacious reasoning and unsound deductions.

Such were the thoughts of our advertising man as he reviewed the interview in the editor's office. He was more conscious than ever of the existence of unfriendly attitudes, of the rise of a new generation of eternal questioners capable of arriving at sound conclusions and of the difficult situations which grew out of the tyranny of words. He became acutely aware, also, of a better way to meet these situations, and like David, found five smooth stones available for use—a stone of friendship in every contact, personal or written; three stones of facts, about industry, about what people think, and about economics; and the fifth stone of clear logic to drive all the facts home.

So endeth our parable.

III. Responsibility for Public Relations

While these obstacles and obstacle removers apply to all the elements in the public contacts of a utility company, today I am particularly concerned with that sector of public relations having to do with publicity and advertising.

We recognize that the public relations function of a public utility must always ultimately rest with the highest executive of the company. It affects, and is affected by all of the company's policies—load building and appliance sales, construction, excellence of service, rates, employe problems including training, compensation and morale, property expansion, financing and contacts with regulatory and legislative bodies. Likewise, the chief executive cannot free any of his subordinates from a sense of personal responsibility regarding public relations.

We recognize that in addition to constantly improved service at lower rates, excellent work is being done to promote understanding through public contact programs and employe education. Current examples are the Pennsylvania Edison Company's District Representative Plan, ably presented by Mr. J. H. Shearer in a recent issue of Electrical World, and the sound slide films on constructive customer relations just issued by the Vocafilm Corporation, with cooperation of the Edison Electric Institute.

There is, however, one phase of the public relations approach which, if not already so placed, can best be delegated to the advertising executive, i.e. the publicity sector of public relations. It is my personal belief that a better public relations job can be done by utility companies if the publicity director and advertising manager are the same man. He needs to be the control officer in the firing of our David's stones of friendliness, facts and logic, so far as the published, printed word is concerned. This responsibility can only be delegated in this manner, however, when the advertising executive is of such caliber as to be sensible of the obligations and opportunities such an assignment includes.

IV. A Suggestion to Management

Why tie in the publicity sector of public relations activities with the responsibilities of the advertising executive?

1. Because the advertising man already has close contacts with publicity media. He can serve both as an interpreter of company news as well as a buyer of space. This dual relationship with newspapers may be largely a matter of better personal acquaintance with their owners, editors and reporters. It affords an opportunity for more frequent informal contacts in which the utility advertising man has an opportunity, on or off the record, to present the company's viewpoint on matters of public interest.

2. Every bit of advertising done by the company can be checked as to language and statement against the company's public relations policies, to serve the purpose of establishing a friendly, human understanding.

3. Many of the commercial advertisements can be developed to contain a definite public relations component, such as "Electricity is the cheapest thing you buy," "Industries grow, where power rates are low," "It pays to live better electrically," "Only one shut-off in eighteen months," "See your electrical dealer," "Operating cost lowest in state."

4. When institutional advertising and publicity articles are released, the advertising executive has an unique opportunity to weigh the effect of company policies on public attitudes.

5. The advertising manager should be in the best position of any one in the company to know what size advertisements, what kind of copy, what sort of

headlines, are the most effective in putting across specific messages and to see and utilize opportunities for impressing facts about the company's policies favorably upon the public. Indeed, close contact with newspapers and with individuals who respond to the advertising may very often result in a much more direct and forceful public relations appeal than is ordinarily authorized by executives less closely in touch with these sectors of the territory. An editor may be ignorant of the company's rates. Evidently, then, rates need to be publicized much more vigorously than previously. The publicity director may sense the need of stressing favorable company policies, such as the free installation of ranges; the low cost of rural line extensions; the attitude of the company toward the development of electrical appliance dealers in the territory. These needs can be met through the printed word.

6. An appraisal of editorial attitudes and public attitudes is possible through a reading and analysis of incoming publicity printed by the newspapers within the company's territory. Such an appraisal is of vital value to management.

Given such broad gage leadership in advertising and publicity, through whom funnels all incoming and outgoing publicity, and to whom is committed publicity as well as advertising contacts with the press, then major additional public relations values should accrue to management. These activities can be directed with such small increases in budgets as to well warrant the investment.

V. Doors that Should Be Open

To secure the fullest values from such an operation, definite responsibilities rest upon management. What are they?

1. It is of the utmost importance for the advertising and publicity executive to be familiar with all the public relations problems of his company. He should be given entree to all internal management affairs which will enable him to keep the company's broad picture clearly before him.

2. He should be free to advise management with respect to the public interest in individual company policies as revealed by his analysis of public opinion.

3. He needs to secure first hand, the viewpoints expressed at sales committee conferences, manufacturers' product and promotion presentations and similar group meetings.

4. He should be acquainted with and exchange ideas with men holding similar positions in other companies.

5. He should attend conferences, such as this, not sporadically, but regularly, to familiarize himself thoroughly with the general problems facing the industry.

6. He should be given the opportunity to take an active part in the industry's committee activities, particularly those which face the problem of promotion and sales in all fields.

From all these contacts he will be able to provide leadership definitely contributing to the molding of public opinion in a unified program.

Conclusion

This morning's plea, then, is

First, for a new evaluation of the obstacles which stand in the way of a more favorable public opinion for the electric utilities.

Second, for the recognition and use of these forces, stones for David's sling, which can be of value in overcoming these obstacles.

Third, to offer two practical suggestions to aid in meeting this problem.

The first suggestion is to management, urging the centralizing of responsibilities for publicity and advertising in order to make these related activities produce maximum public relations results. Such a set-up may exist in some companies but contact with many men in the advertising industry suggests the contrary. Reasons have been given why this procedure is sound, and doors which company management should open to take full advantage of every existing opportunity to guide public opinion, have been indicated.

The second suggestion is to the electrical industry at large, namely; the creation of a committee for the consideration of the advertising and publicity factors in public relations. Such a committee's personnel should include those who are constantly working in this field.

There does not exist, to my knowledge, a common meeting ground for discussion by advertising and publicity men of both elements in this problem. The Public Utility Advertising Association affords a once-a-year gathering attended by electric, gas, and other utility company representatives. Such a meeting does not lend itself to the discussion of the specific problems of our own industry, nor make possible the major contribution which I believe can be forthcoming by an intelligent organization of personnel for the industry's good.

It should be possible, by study and analysis of the questions involved, to develop wise procedures in helping to meet the industry's problems.

If we admit the necessity of any program which presents the unvarnished truth in an intelligent manner for the molding of public opinion, it would seem the part of wisdom to remove every obstacle standing in our way. We should pick a few stones from the brook and utilize whatever Davids are in the ranks to face courageously the Goliaths which confront us.

Power Sales and Profits

(*Continued from page* 266)

First—No industry is completely electrified.

Second—Rates must be such that they will obtain the bulk of the business but at the same time protect the company in these times of rapidly changing and fluctuating business conditions and costs.

Third—A properly balanced selling organization is necessary.

Fourth—Energetically seek that business which makes use of the utility's existing facilities to the greatest extent.

And finally, even though our industrial sales are slipping, now is no time to relax selling efforts when competition is so keen and when we have so many opportunities to electrify operations never before electrified for the reason that business men are more receptive to money saving plans today than they would be if business was booming.

The President's Address

(*Continued from page* 257)

lic service. Everywhere this spirit of service prevails. It is one of the greatest assets of our business; and although it does not appear on our balance sheets, it represents great value to our stockholders, our employees and our customers. This loyalty and devotion to the public service, sometimes to the point of risking life itself, is something that raises our industry far above the level of ordinary business. It is a tradition which we must never lose; for so long as we keep it we shall be good public servants, and shall thus find a happy and useful outlet for all our energies—whether from our power plants, our brains or our hearts.

Growth?

By Harry A. Snow

Controller, The Detroit Edison Company, Detroit, Michigan

An Address before the First General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1938

IN THE last two decades from 1917 to 1937 electrical energy generated by the utilities of the United States as reported by Edison Electric Institute has grown from 25,438,303,272 kilowatt-hours per year to 115,165,636,000 kilowatt-hours, or more than fourfold. In 1937 three main classes of electric service took 91.0 per cent of the total output; residential service 19.4 per cent, commercial service 17.6 per cent and industrial service 54.0 per cent. The small remainder is principally required for street lighting and traction.

Residential service (including farms) has had the most rapid growth, increasing from sales estimated at 1,600,000,000 kilowatt-hours in 1917 to 19,264,793,000 in 1937. The increase in the two decades has been twelvefold. The increase in the two other main classes of service has been only a third of the increase in residential service. Commercial service increased from 3,950,000,000 kilowatt-hours in 1917 to 17,557,951,000 in 1937, a little more than fourfold. Industrial service increased from 14,450,000,000 kilowatt-hours in 1917 to 53,546,370,000 in 1937, an increase of almost fourfold. In the two decades, residential sales have increased twelvefold while commercial and industrial sales have only increased fourfold.

Residential Service

The increase in sales to residence customers has come from (1) an increase in the number of customers and (2) an increase in the consumption per customer.

In 1917 there were 5,810,300 residence customers in the United States, and in 1937, 22,939,020. Meantime the population of Continental United States increased from 102,172,845 people to 129,257,000 people. Thus in 1917 one family in four was receiving electric service; in 1937 three families in four. There is not much room left for growth by extending service to more families. In cities and villages electric service is already universally available and almost universally used; in the farming areas 28.7 per cent of the farms with dwellings valued at more than $500 and 19.3 per cent of all occupied farms are receiving electric service. Sales will be increased somewhat by the continuing extension of farm lines, but net earnings cannot be increased thereby unless suitably high rates are charged because the farm territory that provides only three or four customers per mile of distribution line requires the investment of $300 or $400 per customer for line, transformer, service and meter alone. With immigration restricted, the growth of population will not be spectacular and the extension of lines to homes now unserved can produce no more than a 10 per cent or 15 per cent increment.

MR. SNOW

Consumption of electricity per residence has increased from 275 kilowatt-hours in 1917 to 839 in 1937. This type of growth has by no means approached a natural limit. In the City of Winnipeg the average annual consumption attained in 1937, 4,765 kilowatt-hours. Rates in Winnipeg are low (.827c. per kwhr), so that electric energy is cheaper than fuel for cooking and water heating. In two "All-Electric Homes" in Detroit consumption in 1937 was metered at 7,734 and 11,884 kilowatt-hours respectively. These homes are for families of only two people, but the cooking, refrigeration and water heating are done electrically. Obviously 5,000 to 10,000 kilowatt-hours can be used to advantage in a small home, even without such consumption as may sometime come from the developent of air-conditioning.

An item by item examination of the energy consumed by appliances convinces that large annual consumption is not a dream.

ENERGY REQUIRED ANNUALLY TO OPERATE CERTAIN APPLIANCES
(kwhr)

Simple Lighting	360 kwhr
For Better Lighting—Add	250 "
Flat Iron	94 "
Radio	70 "
Toaster	36 "
Percolator	72 "
Washer	42 "
Vacuum Cleaner	20 "
REFRIGERATOR	325 "
Electric Clock	18 "
Space Heater	50 "
Portable Fan	36 "
Food Mixer	10 "
Waffle Iron or Grill	34 "
Kitchen Exhaust Fan	68 "
RANGE	935 "
WATER HEATER	3,900 "
Oil Burner Motor	258 "
Ironing Machine	100 "
Dishwasher	34 "
Total Annual Consumption	6,712 kwhr

The appliances are listed in the approximate order of their popularity. Three appliances, the water heater, range and refrigerator between them account for 77 per cent of the total. The problem of growth for residence service is the problem of making available to everyone these three appliances. Suppose we examine the possibilities, and the obstacles, first of all direct competition.

Where good gas service is available it offers a competitive service which cannot be ignored. For the City of Detroit the electric utility and the gas utility submit these average annual consumptions:

	Average Electric Consumption (Kilowatt-hours)	Average Gas Consumption (M Cu. Ft. of 530,000 B.t.u.)
Range	935 (Probably a little low)	24.0
Refrigerator	325	22.7
Water Heater	3,900	45.2

It is not sure that these gas and electric consumptions are comparable one with the other. Assuming that they are,

however, we may compute the number of kilowatt-hours needed to do the work of 1,000 cu. ft. of 530 B.t.u. manufactured gas when consumed in a:

	Kwhr needed to do the work of 1,000 cu. ft. of 530 B.t.u. Manufactured Gas
Range	39
Refrigerator	14
Water Heater	86

If manufactured gas costs 80c. a thousand the equivalent price of electricity is:

Range	2.1c per kwhr
Refrigerator	5.6c " "
Water Heater	.9c " "

It appears that, purely from a cost standpoint, gas competition for water heating is so effective that only off-peak storage heaters can make headway, that electricity may well be as cheap as gas for ranges, and that it is cheaper for refrigeration. The advantages of quality of service, collateral costs, etc., possessed by electricity are not discussed here.

So much for direct competition; let us now consider indirect competition. A study made in 1935 and 1936 by the Bureau of Labor Statistics of the United States Department of Labor showed that the median income of 200,000 families residing in 32 cities ranging in size from Willimantic, Connecticut, to New York City was $1,249 a year. The average annual bill for residential electric service in 1937 was $34.81; which is 2.8 per cent of $1,249. The share of income devoted to the purchase of electric service will be determined by twenty-three million shrewd family heads (be it the man or woman) in exact proportion as electric service offers them more satisfaction than movies, a beefsteak or a new suit of clothes. This is the indirect competition which ties electric sales to consumer purchasing power. Electric sales will increase only as purchasing power increases or as the family head decides that electricity is to be preferred to the many other claimants for his limited income.

The cost of electric energy is not the entire cost of electric service. Electricity can only be useful if the home is equipped with suitable appliances and the cost of the appliances may well exceed the cost of the energy consumed in them. In 1937 the Nation's bill for residential electricity was $808,165,900; in the same year householders paid $890,161,650 for electric appliances.

Item by item figures illustrate the cost of house wiring and of electric appliances.

FIRST COST OF WIRING AND THE MORE EXPENSIVE APPLIANCES

House Wiring	$125.00
Range (installed)	109.50
Refrigerator	200.00
Radio	59.50
Water Heater (installed)	89.50
Washing Machine	79.50
Ironer	89.50
Vacuum Cleaner	75.00
Portable Lamps (2)	25.00
Sewing Machine	59.50
Food Mixer	21.00
Oil Burner (installed)	125.00
Total	$1,058.00

The less expensive appliances, flat irons, toasters, percolaters, portable fans, electric clocks, heating pads, waffle irons and so on ad infinitum cost from $3.00 to $10.00 apiece and may add $50.00 or $60.00 to produce a total cost of wiring and appliances for a fully equipped electric house of about eleven hundred dollars. The house wiring is permanent (although additions are often needed) but appliances will last only a limited time, say 5 to 15 years so that annual appliance replacement costs may be from $75 to $125 a year as compared with an electric energy bill of perhaps $100 a year for a fully equipped home. The cost of electric energy is only half of the cost of electric service; the cost of procuring and maintaining a set of appliances will be fully as much. Gas service likewise requires the purchase of suitable appliances.

The national average residential consumption is 839 kilowatt-hours per year, but in Winnipeg the average is 4,765 kilowatt-hours, and all-electric homes consume 7,000 to 11,000 kilowatt-hours. We estimate that there is good use for say 7,500 kilowatt-hours in the home. One obstacle to be overcome is gas competition for cooking and to a greater extent for water heating. A greater difficulty is the limited purchasing power of the consumer. Not only must the consumer buy electricity but he must pay as much more for the appliances to use it. These handicaps are being overcome.

Looking back over the two decades there are three other features of the growth of residential electric service that deserve attention.

The annual load factor has improved. In 1917, sales in the two lowest months of the year, July and August, were less than half (46.7 per cent) of the sales in the two highest months, December and January. In 1937 sales in the two lowest months were more than three-quarters (75.4 per cent) of the sales of the highest months.

The residence load is steady through booms and depressions. Sales of residential energy in 1932 and 1933, the two worst years of the Depression, were larger than in 1929. More recently Detroit Edison sales of residential energy in April of 1938, the sixth month of the Recession, were 15.2 per cent larger than in April of 1937. Depressions have little effect on residential sales.

The distribution system is spreading out because the automobile with its concrete highways has so improved transportation that the crowded city districts of the nineties with their tenements are giving place to far-flung suburban communities with garage houses and a motor car. Accompanying this migration to the suburbs has been the extension of farm lines in the rural areas. The distribution system of 1937 is a more costly affair than it was in 1917. Twenty years ago The Detroit Edison Company required only 50 poles to reach 100 customers; in 1937 it required 77 poles. Similarly in 1917 one line transformer served 30 customers, while in 1937 one line transformer served only 9 customers. We must nowadays provide more poles, more wire and more line transformers to reach 100 customers than we did twenty years ago.

Commercial Service

"Commercial Service" is here defined as all of the service between the residential customer on the one hand and the large industrial plant taking primary service in blocks of 100 kilowatts or more on the other. It is entirely at secondary voltage. The class includes stores, offices, garages, theaters, restaurants, small industrial plants, etc. It is predominantly commercial, but includes of necessity the smaller industrial uses. The fourfold growth in commercial service in the two decades is not as spectacular as the growth in residential service and does not hold as much promise for the future.

The Neon light has revolutionized sign lighting. About 90 per cent of all new electric signs are Neon signs. The principal advantage remaining with the incandescent sign is that the wording of an incandescent sign may be changed from time to time, as is required in signs announcing theater attractions, etc. The Neon sign is attractive and it requires less electric energy than the incandescent sign. A foot of Neon tube requires about 6 watts but a line of incandescent lamps a foot long requires five 15 watt

lamps, or 75 watts. Offsetting this, the lower cost for operating permits sign lighting for longer hours. There is no question that the Neon tube has given us better sign lighting. The optimists in the Sales Department say that the Neon tube has increased sales of electricity for sign lighting, and the pessimists in the Statistical Department say that it has not.

The new art of air-conditioning is getting its first foothold in commercial institutions. If one store is air-conditioned the sheer weight of competition requires that its competitior shall likewise be air-conditioned or else relinquish part of the summer trade. Air-conditioning in residences and in factories has lagged behind air-conditioning in theaters and stores. At the start of 1938 the distribution of rated horsepower of air-conditioning equipment in Detroit was:

Residential	1.4%
Commercial	88.8
Industrial	9.8
Total	100.0

Air-conditioning is highly seasonal and so has a poor annual load factor, yet it comes in the summer months when lighting loads are lowest. To the extent that air-conditioning fills a summer valley it is a low cost service; if it overflows the valley it becomes a high cost service because of its poor annual load factor.

Electric refrigeration is used by stores selling food products but there is no need for it in a hardware store or a dry goods store. Most stores that need electric refrigeration already have it. All residential customers need electric refrigeration, but 50 per cent of them have not yet been able to afford it. Much the same statement holds for water heating, although gas competition for water heating is very effective.

High intensity lighting has developed faster and farther in stores than in homes because its direct stimulus on the volume of business is an undeniable argument.

The excellent transportation provided by the automobile and the concrete highway tends to reduce the number of stores and to increase their size. Chain Store Taxes have the same effect. The "Super Markets" of the A & P Company herald the change from many small stores to a few large ones, and each large store must nowadays be equipped with parking facilities. It is probable that there may be some decrease in the number of commercial customers. At least the increase will be small.

Sales of electricity to commercial customers are not as steady through booms and depressions as are sales to residential customers; neither are they as variable as industrial sales to factories. We speak of daily load factor and annual load factor, and over an economic cycle we might well speak of a boom and depression load factor. The boom and depression load factor of residential service is high, of factory service it is low and of service to stores it is intermediate. Commercial sales in both 1932 and 1933 were less than in 1929, in 1933 by 12 per cent. In April 1938, Detroit Edison commercial sales are less by 4 per cent than in April 1937.

Direct competition from private plants has little effect on commercial service except perhaps where exhaust steam is required, as in laundries and hotels. Neither has indirect competition for a share of a limited income the same effect that it has in residential service since electricity is used in stores to the approximate extent that its use brings in the additional business needed to pay for it. The problem of growth of commercial sales is not so much competition, direct or indirect, as it is to find new uses for electric service which will earn their way.

Industrial Service

Suppose we define "Industrial Service" as service rendered at primary voltage to customers desiring energy in blocks of not less than 100 kilowatts. It is not purely industrial; analysis shows that in Detroit 84 per cent is used for industrial purposes and the remainder for commercial purposes. However, the class is predominantly industrial and will be so named.

Industrial customers are large customers. 480 industrial customers purchased 53 per cent of the total output of the Detroit Edison Company in 1937. Compare this with residential service where 546,415 customers purchased only 18 per cent of the total output. The average industrial customer is some 3,500 times larger than the average residential customer.

In Detroit the use of industrial power per industrial worker has increased from 4,000 kilowatt-hours in 1920 to 11,000 kilowatt-hours in 1937. Assuming that the industrial worker in 1920 worked 2,400 hours per year, he had to aid him the power of two horses. The industrial worker in 1937, working only 2,000 hours per year, had to aid him the power of seven horses. The figures on industrial power per industrial worker are for the Detroit area and they include the generation of privately-owned, industrial power plants.

INDUSTRIAL POWER SALES
Kwhr per Man Employed
Detroit Area
1920 to 1937

Year	Industrial Power Sales (kwhr)	Number of Factory Employes (Average)	Kwhr per Man Employed
1920	697,691,000	172,000	4,000
1921	522,056,000	96,750	5,400
1922	715,887,000	156,500	4,600
1923	955,867,000	216,000	4,400
1924	973,470,000	211,000	4,600
1925	1,370,663,000	236,000	5,800
1926	1,520,404,000	235,000	6,500
1927	1,449,069,000	207,000	7,000
1928	1,932,790,000	261,000	7,400
1929	2,276,679,000	285,000	8,000
1930	1,865,568,000	192,200	9,700
1931	1,388,132,000	155,400	8,900
1932	1,199,829,000	131,900	9,100
1933	1,128,473,000	120,700	9,300
1934	1,695,446,000	194,000	8,700
1935	2,079,696,000	224,300	9,300
1936	2,338,193,000	235,100	9,900
1937	2,779,449,000	252,000	11,000

Sales of industrial energy have increased faster in Detroit than in the United States. Detroit shows for the two decades more than a sixfold increase, whereas the Nation shows a fourfold increase.

Careful estimate of industrial sales in Detroit places mechanical power as developed in motors as the largest component (69.5 per cent), energy for lighting is surprisingly large, 23.1 per cent and the remaining 7.4 per cent is used for heat applications of which electric melting is the larger half.

Industrial power is subject to direct competition. The industrial customer is large enough to build and operate his own steam power plant. In this he has the advantage that he need not build an extensive transmission and distribution system, and that to the extent that he has use for exhaust steam he can generate electricity for 4,000 or 5,000 B.t.u.'s per kilowatt-hour. He must risk the capital to build his power plant, he must provide spare equipment for standby service, and he must forego the advantages possessed by the utility of the high load factor produced by diverse uses and probably of an ample supply of condensing water. For power supply up to 1,000 kilowatts Diesel engines must be considered competitor. Diesel power plants may cost from $120 to $150 per kilowatt of name plate rating, they will generate 10 or 12 kilowatt-hours per gallon of fuel oil and the additional cost of station labor, supplies (excluding fuel oil but including lubricating oil) and

maintenance may run from 3 mills to 6 mills per kilowatt-hour.

As to the boom and depression load-factor, industrial service is the temperamental prima donna of the electric industry. During the Depression industrial sales dropped from 42,970,860,000 kilowatt-hours in 1929 to 30,964,471,000 kilowatt-hours in 1932, nearly 28 per cent. Detroit Edison industrial sales for April 1938 fell off 46 per cent from industrial sales for April 1937. Industrial sales are exceedingly prompt in their response to the ebb and flow of the economic tides.

Growth By Reason of Lower Rates

We are told by TVA that they are teaching privately owned utilities the advantages of low rates as a stimulus for output. TVA goes farther than this. They state that greater sales produce lower unit costs so that profits are actually increased by lower rates. No study of future load growth would be complete without a discussion of these proposals.

Let us examine the first statement, namely that lower rates bring increased sales. In the two decades, 1917 to 1937, the Detroit Edison Company has made sixteen major changes (we will ignore minor changes) in the rates charged for the three classes of service, residential, commercial and industrial. Four of the changes were increases in rates made necessary by a short period of very high costs just after the Great War and twelve were decreases. Counting three classes of service for twenty years gives us sixty opportunities to observe the growth of sales, in sixteen cases after major rate changes.

On the four occasions when rates were increased we observe, for the year following the year in which rates were increased, two increases in the volume of energy sold and two decreases. On the 12 occasions when rates were decreased we observe, for the year following the year in which the rates were decreased, 10 increases in sales and 2 decreases. Thus we find 5.0 times as many increases in sales after rate reductions as there were decreases. This would seem to indicate that increased sales are more likely to follow rate reductions than are decreased sales by 5 chances to 1. But let us observe the 44 occasions when rates were neither increased nor decreased during the preceding year. Of the 44 observations there were 37 increases in sales and 7 decreases in sales which is a ratio of 5.3 to 1. Thus an increase in sales appeared a little less frequently after a decrease in rates than it did when rates remained unchanged. And so we may say from 60 observations of the three major classes of electric service over 20 years of experience that increased volume is no more likely to occur after a decrease in rates than when no change in rates has been made. The price of electricity is a minor factor, not a controlling one, in determining the volume of electricity sold.

For the benefit of skeptics we present a tabular statement of these data:

Major Rate Changes	Sales the Following Year
Rates Increased 4 Times	Increased—2 times Decreased—2 times
Rates Unchanged 44 Times	Increased—37 times Decreased—7 times A ratio of 5.3 to 1
Rates Decreased 12 Times	Increased—10 times Decreased—2 times A ratio of 5 to 1

And indeed why should we expect a decrease in rates to increase the volume of sales unless the decrease is enough to open up new competitive fields? Let us study relative magnitudes. The cost of electricity is such a small part of the cost of living! In 1937 the average residence customer paid $34.81 or between 2 per cent and 3 per cent of his income, for electricity. A 10 per cent decrease in the price of electric service would be a decrease of about one quarter of 1 per cent of his total living expenses. We doubt that so small a change would influence his habits of life. Likewise for industrial service it is doubtful if the price of electricity is a controlling factor in the volume of sales. If it takes 568 kilowatt-hours to manufacture an automobile to be sold for say $700, there results a power bill of say $7.00. It seems unreasonable to assume that the reduction of the power bill from $7.00 to say $6.00 would make it possible to manufacture and sell more automobiles; a 1 per cent tail cannot wag a 99 per cent dog and a 10 per cent change in a 1 per cent item is microscopic in its effect on sales.

While it is plausible that more electricity can be sold at lower rates the experience of The Detroit Edison Company has not proved it so, and the cost of electricity is so small a part of the cost of living, or of the cost of manufacturing, that small changes in the cost of electricity probably exercise negligible effects on the habits of life or the volume of manufacture.

Passing for the moment the question as to whether or not lower rates mean increased sales, let us examine the corollary notion that increased sales mean larger profits even though the sales be at lower rates. To make this numerically possible, unit costs must decrease more than the rates decrease.

The costs of operating an electric utility may be divided roughly into four groups:

(1) *Capacity Costs*

The cost of providing power houses, transmission lines, substations, distribution feeders and line transformers to generate and distribute electric energy. The cost of electric equipment is approximately proportional to the load carried, and if load factor remains constant, to the output of energy. If the output of energy doubles, the total cost of electrical equipment doubles and the cost per kilowatt-hour remains unchanged. The cost of electrical equipment, including all operating expenses except the cost of coal burned and including maintenance expenses, taxes, depreciation and interest is, expressed as a percentage of total costs: 52%.

(2) *Energy Costs*

The cost of coal burned to generate electrical energy is closely proportional to the volume of energy generated. If the output doubles the cost of the coal needed to generate the output likewise doubles. Expressed as a percentage of total cost, coal costs are: 11%.

(3) *Customer Costs*

The cost of extending distribution mains to reach the small customer, of providing a service connection and a meter, the cost of reading the meter, rendering and collecting the bill and the cost of commercial contact with the customer, taking his order for service, answering his questions, replacing his fuses, etc. The cost of the tag-ends of the distribution system is not proportional to the load carried; for such small loads the cost is proportional to the length of line and to the dispersion and the number of customers to be connected. All of the cost elements making up this group are roughly proportional to the number of customers connected. If increased sales arise because there are more customers these costs increase with volume; if from a greater consumption per customer these costs are little affected in total and the cost per kilowatt-hour is decreased by a rising volume. Customer costs are: 20%.

(4) *Overhead Costs*

The cost of general offices, warehouses, garages, a communication system, research laboratories, working capital, an executive staff, accounting work, general advertising, the Federal Income Tax, etc. Such costs constitute the overhead expense of the business. They are not proportional to capacity nor to output nor to the number of customers. Yet a large company has more overhead expenses than a small company and presumably a larger output would increase overhead expenses, but not proportionately. It is quite probable that overhead expense per unit of output would be decreased by increased volume. Overhead expenses are: 17%.

Suppose we examine the behavior of the four types of cost as sales increase. Capacity costs per kilowatt-hour, 52 per cent, will remain unaffected unless the system load factor be improved. Such improvement does not result automatically from an increased volume of sales. Energy costs per kilowatt-hour, 11 per cent, are directly proportional to output and so to sales. Customer costs per kilowatt-hour sold, 20 per cent, will remain unaffected if increased output results from more customers, but they will be decreased if increased output results from higher consumption per customer. Overhead costs per kilowatt-hour, 17 per cent, will probably decrease somewhat with increased output but not in inverse proportion. We estimate that for normal growth 76 per cent of the unit costs per kilowatt-hour of output will remain unchanged by an increased volume of sales and that the remainder, 24 per cent, decrease in inverse proportion to increased volume. If the unit cost per kilowatt-hour for the present volume of business of The Detroit Edison Company be taken as 100 per cent, the cost per kilowatt-hour for an output 50 per cent larger might be 92 per cent.

These unit costs are for the business as a whole. For residential service the relative importance of the four cost elements is much different from their relative importance for industrial service.

	Residential Service	*Industrial Service*
Capacity Costs	34%	64%
Energy Costs.....	5	18
Customer Costs.....	44	1
Overhead Costs.....	17	17
Total Costs	100%	100%

Customer costs are the largest element of the cost of residential service, while for industrial service they are negligible. The unit cost of residential service may be lowered markedly by increased consumption per customer. In Detroit the average residence customer consumed in 1937, 910 kilowatt-hours. If he had consumed twice as much, 1,820 kilowatt-hours, the cost per kilowatt-hour would probably have been some 24 per cent less. For industrial service the cost per kilowatt-hour might decrease say 3 per cent for a doubled volume. These statements are true if diversity, load factor, coal prices, taxes, etc., remain unchanged and if increased volume results from increased consumption per customer. For residential service the statement that larger volume brings lower unit costs is much more significant than it is for industrial service. In residential service a doubled volume may lower unit costs 24 per cent. This fact is already recognized in the block form of rate which provides automatically a decreased charge for increased consumption. Thus in Detroit the charge per kilowatt-hour for 910 kilowatt-hours is 100 per cent and for 1,820 kilowatt-hours 80 per cent.

We have discussed the proposals of TVA that the road to lower costs is through lowered rates and increased volume. Lower rates do not usually increase volume, and block rates already provide low unit charges for large volumes. So much for the TVA proposal. Now let us make a proposal of our own. Lower unit costs for electric service may be attained in many ways, for example through lower labor costs. However, the Wagner Labor Relations Act, the Wages and Hours Bill, etc., and the continuing attitude of the Administration all work toward higher wages and shorter hours, and hence of course toward higher costs. Lower costs may be attained through lower coal prices, now made difficult by the Guffey-Vinson Coal Control Act. Lower costs may be attained through lower interest rates. The Securities and Exchange Act has not made it easier to re-finance, nor has confidence in the continuing solvency of utility companies been increased by the Public Utility Act of 1935. Lower costs may be attained through lower taxes, and with this fact in mind we note as recent additions to the tax burden imposed on utilities the Old Age Benefits Tax, the Unemployment Compensation Tax, the Federal Excise Tax on electricity, the Undistributed Profits Tax and a higher Income Tax. Lower costs may be attained if less reports be required of the accounting staffs of utilities, and at this moment we have before us a 132-page questionnaire from the Federal Power Commission, the most voluminous questionnaire we have ever received and in 1937 the Detroit Edison Company forwarded to State and Federal authorities 21,726 pages of reports of various kinds. In 1917 this figure was 487 pages. While the Federal Government is earnestly seeking lower prices for electric service on the one hand, it makes the attainment of lower prices as difficult as possible by its "reform" program on the other. And the statement that the answer to the problem lies in lower rates with automatically larger volumes, lowered unit costs and increased profits is quantitatively hopelessly inaccurate.

We have answered the proposal that lowered rates will themselves lower costs and increase profits; we now challenge the Federal Government to answer our counter proposal that the way to lower prices for electricity is through the cessation of governmental boosting of financing, labor, coal, and accounting costs and by a reduction instead of an increase in the heavy taxes which it now imposes. These statements are made dispassionately and without rancor. They are made, not to fight Our Government, but because Our Government needs to be informed of quantitative truths.

Modern Kitchen Bureau Contests

BIG cash prizes still remain to be won in the Modern Kitchen Bureau's electric water heater program. Although the Executives and Engineers Contest has already closed and the prizes awarded, as announced elsewhere, there are many other prizes open to ambitious salesmen and others in the electric water heater field.

The contest for the best newspaper advertising campaign will close on July 31. It is open to utilities and dealers. A campaign, to be eligible in this contest, must consist of at least four advertisements. Awards will be made on the basis of soundness, ingenuity and consumer appeal, and the modest campaign has as good a chance as the big one. First prize is $250; second prize, $100; third prize, $50.

To the utility company which does the best all-around water heater job during 1938 there will be awarded $1,000 in cash and a handsome trophy. The factors to be considered in making the award are sales increase over previous year, saturation increase, unit volume, plan and dealer cooperation. This contest runs until December 31, 1938, but utilities are requested to notify the Bureau of their intention to take part in this contest as soon as possible.

The contest for the best window display of electric water heaters closes June 30th. Prizes will be awarded on the basis of sales appeal and educational value. Photographs of window displays used between January 1st and June 30th, 1938, may be submitted. First prize is $100; second prize is $50; and there are ten third prizes of $10 each.

Finally, there are the monthly salesmen's letter contests, with three ten dollar prizes awarded each month, and a grand prize of $100 at the end of the year. The letters must be on the subject of: "How I Sell Electric Water Heaters." Ideas, not composition, are what the judges will look for. It is hoped that every state in the Union will be represented in this contest before it closes.

Deflecting the Curve of Rising Accounting Costs

By B. S. Rodey, Jr.

Associate Controller, Consolidated Edison Company of New York, Inc.
New York, N. Y.

An Address before the Second General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7th, 1938

FIRST of all I should like to report briefly concerning the activities of the Accounting Committee of the Edison Electric Institute during the period in which I have served as Chairman.

In the several years prior to the present form of organization, the accounting activities of the Institute were carried on under the jurisdiction of one committee. For some years no opportunity was offered for a get-together on a national scale. It appeared to me on taking office that one of the most important phases of association work in the industry was to recognize the value of discussions and exchange of ideas resulting from periodic meetings of our leading accountants. Stating this, I would in no way detract from the value of the accounting work that was done by my predecessors in office. They were guided largely by what they felt was the policy of the member companies comprising the Institute.

I have reason to believe that the idea of member companies in curtailing the committee work did not extend to the point where they desired it discontinued entirely. With that thought in mind, I planned a national conference of the accountants of the Edison Electric Institute in Detroit, November 8, 9, and 10 of last year.

The attendance at that meeting exceeded our estimates. It demonstrated the tremendous interest of our accountants in again meeting with each other to discuss the changes in methods, and the additional accounting activities made necessary by the many new commission regulations, additional taxes, social security matters, etc. In fact, we might state that those attending that conference appeared almost hungry for information and details concerning each other's work. The total attendance approximated 350 and included four representatives from the West Coast (California and Washington) and also visitors from Canada and Bermuda.

A great deal of interest was displayed in property accounting and the new developments in this field. This applied also to general and commercial accounting and related matters.

MR. RODEY

In view of the common purposes of the Edison Electric Institute and the American Gas Association *in accounting matters*, a closer cooperation was brought about and will be continued where desirable. This will result in the elimination of duplication in attendance at meetings where the delegates, as is frequently the case, are from combination companies, i.e., companies with both gas and electric operating departments.

We have received many commendations for the work accomplished in Detroit, which is a strong indication that such meetings should be continued and that their ultimate effect will mean marked savings to our companies.

As the result of certain resolutions, demanding a broader working organization to cope with current accounting problems, the following committees were organized:

A General Committee to outline and guide policies; and five special committees on: Classification of Accounts; Customers' Relations, Commercial Accounting and Collections; Plant Accounting and Records; Depreciation; and Purchasing, Stores and Transportation.

One of the special activities which should be of particular interest in view of its importance is that of the committee organized to study and report on depreciation. Your cooperation will be required in assisting that committee in its work, so that necessary factual information may be assembled for your benefit.

A few of the other accounting problems on which your committees have been engaged in the past year include the Annual Report Forms, Securities & Exchange Commission Registration Forms, Interpretation of Uniform Accounts and Instructions, Uniform Retirement Units, and Uniform Rules regarding the Retention of Records.

So much for the activities of the Accounting Committees. Let us now turn to my assigned task. Why have accounting costs increased and what can be done about it?

I have spent some time in trying to ascertain just what has been the trend of accounting costs during the past 30 years. It has been very difficult to unearth the true facts, because these costs are often hidden; they are not wholly reflected in the charges associated with accounting. The aggregate of such costs would also include, for example, the additional technical and clerical help engaged in making maps and records necessary for recording inventories and other statistics over and above those required purely for operating purposes. Again, there are the expenses for the clerical forces in district offices whose task is to care for labor and material allocations, to gather statistical data, and perform other special accounting operations beyond their own normal needs. Special statistical departments or divisions may or may not be associated in a particular company with the accounting department. These groups compile financial statements, budget and expense estimates, rate statistics and analyses, reports to Public Service Commissions, etc. Payroll Departments are sometimes decentralized and not considered part of accounting. Again, special squads for the checking of "materials and supplies," or for taking inventories of fixed properties are charged to other accounts. In my mind, all these operations are un-

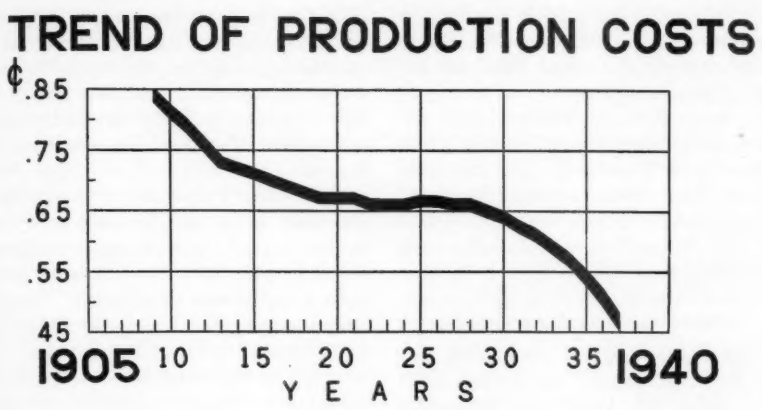


Chart I

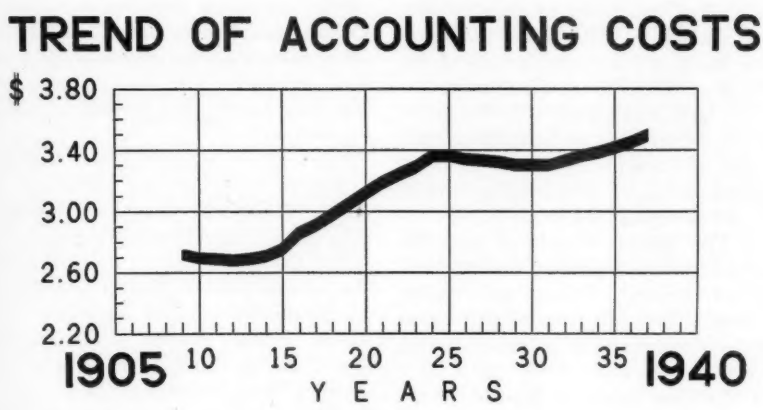


Chart II

deniably accounting, and must be considered, if we are to know the extent of the accounting costs in a particular company.

I have endeavored to chart accurately a typical trend of the aggregate accounting costs in the last thirty years. By way of comparison, another chart reflects the trend of production costs during the same period.

You can see from Chart 1 that production costs have been reduced to approximately one half of what they were thirty years ago. Now let us look at the accounting illustration and see what has happened. We find here that the accounting costs have increased from approximately $2.70 per customer per year in 1909 to approximately $3.50 in 1937, or in other words, they are today thirty per cent greater. In terms of production costs of electricity, accounting costs have increased, in thirty years, some 250 per cent.

Now let us see what have been the causes for this situation, and whether this trend can be justified. The factors that have made for the increase appear to be as follows:

First: Requirements of Regulatory Commissions

This may be discussed briefly under several subdivisions:

1. *Work Order Systems.* Some twenty or thirty years ago, utility companies were obligated to install particular types of work or job order cost accounting systems. Prior to that period, facts concerning construction costs did not have to be recorded with the extreme rigidity and formality later developed.

2. *Elaboration in Primary Construction Accounts.* Thirty years ago the divisions of construction accounts were quite broad, without much endeavor for general uniformity, and refinement in allocation was not emphasized. While there has been only a slight increase in the number of primary construction accounts since that time, the more recent systems prescribe additional subaccounts for each borough, village, or town, plant, general building, substation or class of fixed assets, thereby substantially extending the number of plant accounts. At the same time, there has also been a greater strictness in respect to the items, that can be charged thereto. In some of the most recent systems, details comprising some 60 odd sheets of finely typed printed matter are devoted to plant and construction accounting details.

3. *Extension of Expense Accounting.* Operating and maintenance accounts have likewise increased in number and here, too, the requirements are now much more formal and exacting than a generation ago. For example, I recall a recent case which caused considerable debate among the accountants of the commissions and the industry. The problem there was where to charge the time and expenses of cashiers. Let us hope that the cashiers did not have to wait for their pay checks until the controversy was settled. Ultimately I suppose, almost every detail in respect of what costs should be entered in a particular operating expense account will be a matter of law and regulation.

4. *Continuing Inventories.* Continuing inventories should perhaps have been considered together with construction expenditures, but are worthy of separate mention. At present they are not demanded by the Federal Power Commission, but it appears that they will soon be required by many of the states and are already called for by some. The expense of inaugurating these systems may approximate $7.50 to $10.00 per $1,000 of investment. Evidently, this additional requirement is, or may be, an important factor in increasing costs of accounting, even beyond the original cost of installation.

5. *Depreciation Accounting.* The new requirements provide not only that depreciation be determined, but also, that the amount of the annually accrued depreciation shall be divided down to each primary plant account, and that thereafter the charges for actual retirements of property be likewise so allocated. The extent to which this feature will add to the accounting costs is at present still somewhat a matter of conjecture.

6. *Other Additional Costs due to Regulation.* In addition there are a large number of statistical and accounting reports, required annually, monthly, or for other periods. The extent to which these reports have been called for is now bothering the Federal Authorities. In a press release to The New York *Times* on May 18 of this year, the President is quoted as requesting Mr. Stewart A.

Rice, Chairman of the Central Statistical Board, to submit recommendations looking towards curtailments consistent with efficiency and economy both as regards the Government and private industry.

It may also be noted that the new systems of accounts prescribing original cost accounting impose substantial expense due to the necessity for reestablishing and reclassifying plant costs. It is to be hoped, however, that this expense will be materially decreased once the new principles have been established.

Requirements for the Retention of Records have also added to the cost of accounting. Relief in this respect may come as soon as retention schedules have been approved.

Second: Requirements Due to Taxes and Related Matters

The following features have tended to increase accounting costs:

1. *Income Taxes.* The greater detail progressively demanded in relation to Income Tax returns, particularly as regards depreciation deductions, has led to an appreciable increase in accounting effort.

Furthermore, there exist conflicts between the Income Tax laws and the regulations of the Federal Commissions in the matter of what costs shall be capitalized. For example, all taxes applicable to construction must be capitalized according to the various new Uniform Systems of Accounts, while the Income Tax laws and regulations require their exclusion from the plant accounts. This situation has led to the popular accusation that utilities maintain two or more sets of books.

2. *Franchise Tax.* For the measurement of Franchise Taxes the primary guide consists in many states of an elaborate annual report including, in addition to full financial information, more or less complete inventories of the physical properties in the streets and highways, and their cost. In many instances, however, the costs of preparing these reports are only incremental, since similar data may often be used in other State and Federal reports.

3. *Sales Taxes.* Many states and their subdivisions have inaugurated various types of excise taxes measured by volume of sales and receipts. Because of the peculiar nature of the laws, these taxes are not always predicated on accounting facts readily available. Such returns therefore frequently require special preparation. If it concerns deficiency claims, arising often from misunderstanding, due to hasty and ill-considered wording of the statutes, it may even be necessary to draft substantial clerical help for extended periods of time.

4. *Social Security Taxes.* Social Security taxes obviously add much to the costs of payroll accounting and personnel records, etc. Other closely related extractions could be mentioned, for example, State and Federal Unemployment Insurance, etc.

Third: Consumers' Accounting

Notwithstanding all mechanical aids and so-called machine accounting, there has undoubtedly been some increase in consumers' accounting costs.

1. The steady increase in volume has not always been offset by mass production methods. Besides, shortening of labor hours and increase in rates of pay have been effected from time to time.

2. The added variety of the use of electric power and the attendant complexity of modern rate structures and regulations has led to increasing demand for sales analyses and statistics.

3. The housing conditions and the habits of people nowadays do not facilitate expeditious indexing and reading of meters, although substantial progress has been made of late in this direction by many companies.

4. In some instances demand meters and other devices have added to the expense of computing the customer's bill.

5. Mailing or delivering and the collecting of bills may have resulted in some increase due to labor cost, postage, and again the habits of people.

Fourth: Consumers' Deposits

The greater volume of consumers' deposits, the necessity in some states for records of unclaimed deposits, and their periodic sequestration, have tended to increase expenses. In many states it is still required to pay 6 per cent interest on these deposits, and this, together with the cost of keeping the records, may be 2½ to 3 times the amount of any provable saving through the lessening of uncollectible bills. Many companies would probably discontinue taking any deposits whatever, except for the fear that the amount of uncollectibles might increase.

Fifth: Management Requirements

1. *Complexity of Modern Management.* Responsibility for increased accounting costs cannot all be attributed to governmental requirements. The complexities of management in the utility business, the enormous size of some of the companies, and the details of their various organizations that must be followed up, supervised and controlled, all have a bearing and tendency to increase accounting costs. Some of these may be illustrated.

2. *Budgetary Control.* The management may insist, for the purpose of effective control, that departmental expenses be estimated in advance as basis for a so-called operating budget. Such a budget may be quite simple in its requirements and of a fairly broad-gaged nature, but in some instances it may go to the extreme of treating payrolls separately, supplies separately, each department separately, and perhaps each bureau or subdivision of the department by itself. Of course, any budget loses much of its value unless there is a detailed follow-up. To what extent and how far such systems may justify their expense is indeed a problem.

3. *Financial Statements and Reports.* Financial statements and the extent of the detail required therein for management purposes are in many instances the cause of added accounting costs. A given executive may be satisfied to delegate responsibility for detailed supervision and simply demand results, while another may want an enormous amount of accounting items, in order to check minutely the various operations. Even the officer or individual having delegated authority frequently makes more or less use of accounting facts.

4. *Labor and Payroll Statistics.* The ever growing needs in respect to labor statistics, personnel records, pensions, separation allowances, payroll deductions, all have a tendency to increase accounting costs and records.

Sixth: Cost Accounting

An accounting department may elect to allocate labor and material costs meticulously to various accounts; may accrue for certain expenses in order to apportion them equally over the period; may have work and job orders for each field operation no matter how minor, or whether recurring or not; may choose to determine the maintenance cost of various types of machinery of a given power plant by accounting methods; all of which may tend to increase accounting costs.

Seventh: Departmental Reports and Forms

1. *Departmental Reports.* In every large company there is an insidious tendency to pyramid departmental reports and forms. Unless carefully and con-

tinuously supervised, such reports will materially increase the accounting load.

2. *Closing Periods.* Frequently expense for overtime is incurred in order to prepare financial information for stated meetings. This applies also to special data often required for special meetings. No accountant is ever excused for failure to meet a deadline regardless of cost.

3. *Litigation.* One of the very substantial elements in accounting costs is caused by litigation with the attendant demands for information and statistical data of sometimes unlimited volume, usually of a special character, and invariably required for immediate use. It is also true that added complexities of regulatory requirements and tax matters, plus business conditions in general, have resulted in additional litigation.

Eighth: Outside Inspections, Investigations, and Audits

Another important factor is the number of governmental auditors, checkers, and inspectors. Time must be spent in delivering records, explaining them and checking their return. In addition, floor space and other facilities must often be maintained for these outside people. Because of the close relation of their activities with accounting matters, the brunt of these expenses is usually directly reflected in increased accounting costs.

Ninth: Municipal Relations

Relations with municipalities and municipal authorities involving street lighting contracts, street and highway improvement, etc., wherein the companies are required to meticulously account for costs and to supply minute statistical data prior to reimbursement or renewal of contracts, often add to the accounting burden.

My purpose in enumerating these various factors which have unquestionably brought about the rising trend of accounting costs should not be construed in any way as necessarily critical. Many of them are undoubtedly warranted by circumstances and conditions beyond individual control; many may have brought about economies in other directions, and yet, they seem to offer an inviting field for possible economies.

Undoubtedly the general improvements in our business resulting from decreased production and distribution costs are in a large measure due to the fact that our engineers have constantly kept in contact with each other in matters of research and study. Not for one moment did they, on the discontinuance of our former National Association and the inception of our new association, stop their activities on a national scale. The only ones that did so have been the accountants who took literally the edict to practically discontinue their conferences and national committee work. As a result, they have lost to a large degree the opportunities of learning what is happening in their business, and of comparing their methods. We believe that curtailment of accounting research for the industry as a whole was a serious mistake, which should be rectified by reviving again, under careful supervision, the research work and study by our public utility accountants.

There was a time ten years ago when any executive accountant in the industry could enumerate at least upwards of fifty colleagues with whom he had personal contact and an exchange of ideas. I am speaking of accountants of national reputation who have gone out of the picture, died, or retired. There has been no endeavor to bring forward the younger key accountants on whose knowledge this industry is dependent for the general improvement of methods and procedures. As never before in the history of the utilities we require now expert accounting knowledge. Deciding on the advantages and disadvantages of the various methods and determining the one most suitable for a particular company, is usually a very complex matter. Only through a broadening of the vision and knowledge of our younger accountants, based largely on personal discussions, can we expect to make headway with these problems.

My own experience has been that you will never solve the more involved accounting tasks of this industry until you recognize that you must elevate the standard of your accounting personnel and acknowledge their professional qualifications. Their position is an important factor in your organization and vitally affects the welfare of your business. For some unaccountable reason, the only recognized professional accountants in this country appear to be those who have been called public accountants. They represent, perhaps, less than 5 per cent of the qualified accountants needed to carry on the responsibilities of your accounting departments. Your accountant must know not only the intricacies of your business from an operating viewpoint, but he must also have a knowledge of economics, some knowledge of law, and a generally advanced education. He should, therefore, be accepted as a professional.

I have promised to point out a number of possible accounting economies. Before doing so, let me, however, confess that I am not at all sure that any of us know today exactly just what an economy means. Elimination of work in one direction may in fact result in increased strain or loss of valuable information elsewhere. More often than not, a so-called economy is more apparent than real. However, there exist undoubtedly substantial possibilities for improvement, and my suggestions can only scratch the surface as to the opportunities available through adequate research and study.

Plant Accounting

A simpler treatment of our present plant accounting would be, in my estimation, the first and foremost of possible economies. The pendulum here has swung so far that one might think we have carried accounting for construction costs, inventory, retirements, and depreciation matters to a point where accounting seems to become an end in itself.

What we call the "Dollar Follow the Property Theory" has possessed the minds of many accountants and engineers to such an extent that hardly any material change can be made in the physical plant without a corresponding authorization and debits and credits to Plant Investment Accounts. This is done, of course, to maintain net plant costs corresponding to existing plant facilities.

Suppose "theory" should swing in the other direction and no changes in the physical plant in the nature of substitutions, replacements, and reconstructions of existing facilities were handled through the investment account, what would be the result? A very substantial saving in construction and plant accounting expense. We can't even be sure at this time that any real loss would occur in necessary accounting or original cost rate base information. In fact, the result might be nearer to a corrective "Investment Accounting" basis, so far as an automatic rate base is concerned. The new accounting regulations are opposed to such a method, however, and any such saving will require research, proof, and a great deal of effort. Is it worth while?

It would seem possible that a saving to the industry of several million dollars a year might be accomplished if the plant accounting requirements could be

reduced to their bare essentials, such as a reasonable subsegregation of investment costs of particular plants, locations and areas. Should the commissions consent to such a step, we might effect still more important savings by obtaining agreements establishing depreciation and maintenance reserves on a fair overall percentage of investment, to be adjusted periodically as experience might require.

Construction Overheads

The processes now frequently used in the apportionment of so-called construction overheads present considerable possibilities of accounting economies. Let us look, for example, at the accounting for the costs of a testing department. One way consists in determining the costs for each and every testing job, having the men put down the time spent on such job, and accounting at the same time for materials used or expenses incurred. What cannot be directly allocated, such as management and supervision, is charged to the various jobs as indirect cost or overhead. On the other hand, we might take the same department and charge all of its costs to one clearing account, compute what the testing cost would be per man-hour and then, on the basis of the number of hours directly reported on a given job, allocate such costs to the various accounts. Obviously, the latter method is less costly than the former. You may, of course, object that it results in charging a man whose earnings are 75c per hour, for example, to an account on the basis of $2.00 per hour. The method involves, however, a flat determination of the cost of a man-hour of testing, including all departmental costs. This is the way your plumber would bill you if he were doing a job on your house. What justification is there for method one over method two?

Stores and Transportation

1. *Small Deliveries.* All companies are confronted with the accounting problem pertaining to small deliveries of materials made by their Transportation Departments.

To facilitate the accounting distribution of these costs, consideration should be given to their collective treatment, in preference to the separate accounting for each item of delivery cost. This can be accomplished by the use of an average hourly rate, on the basis of the truck hours of service rendered to the respective departments.

One average rate can be used for all trucks, since availability rather than the size of the load may be the determining factor in assigning a truck for a given service.

2. *Handling Salvage Credits when removing and resetting Electric Meters.* In connection with removing and resetting Electric Meters, it is decidedly impractical to identify the small materials returned to the Stores Department with each installation.

A practical solution of this accounting problem, would be to accumulate this material in the storeroom, segregating the usable portions from the various kinds of junk, and periodically issuing a Summary Credit Ticket.

This Credit may be applied to the removing and resetting meters account, instead of attempting to identify the credit of the material with each individual location, from which the material was removed.

Machine Accounting

Machine accounting offers substantial possibilities, although the determination of actual savings frequently requires an intricate weighting of the advantages to be gained against disadvantages in other directions. At one time, some years ago, machine accounting was put forward as the cure to all evils. While one cannot successfully deny the usefulness of machines in certain phases of accounting, the adoption of machines in place of manual labor should be very carefully considered with regard to all the attending circumstances before jumping to conclusions. There is the human element to be kept in mind. Take the case of a customer, who calls up, insisting that his bills have averaged too much for the past few months and demanding an adjustment. If you are not able to ascertain quickly all relevant information, the effect may be such a loss in good will that any savings in accounting may, in the long run, be more than offset.

Consumers' Deposits

I believe that a reduction in the number of consumers' deposits will in most instances effect substantial economies.

Retention of Records

At the Detroit Accounting conference, Mr. Ulbricht had a very good paper regarding the use of a recording film, whereby a large volume of records may be preserved in a small container which you can cover up in the palm of your hand.

Duplication of Departmental Reports

Duplication in the rendering of routine reports, particularly to parties not essentially interested, requires continuous scrutiny of such reports, the number distributed, and the persons receiving them.

Closing Periods

Coordinating the closing accounting periods with executive meetings to eliminate overtime, and arranging for the early "cutting off" of labor reports, material reports, etc., in order to effect prompt closing, as well as the statistical treatment of split-week payrolls in connection with the accounting for labor costs has frequently resulted in substantial savings.

Conclusion

Many other possibilities could be discussed and enumerated here, but I think that sufficient has been said to indicate the fruitfulness in this direction of more accounting research and studies on a national scale. Perhaps the greatest of all possible accounting economies lies in the development of the character of the accounting force in your own company, for without a keenly trained accounting personnel little can be accomplished. It may seem a paradox, but I think the average utility accountant today is underpaid, considering the qualifications needed to cope with his problem. Thirty years ago, the mechanical performance of the bookkeeper may have been sufficient, sitting on his high stool, a green shade over his eyes, posting figures for the single purpose of finding profit or loss. The duties of the modern utility accountant only begins with making the entry. He must also know why it is made, and, most important, he must use his information wherever possible as a guide to management. The bookkeeper reported what had happened in the past, the accountant advises what should be done in the future.

It follows that to him, and him alone, must be entrusted the responsibility of solving our many perplexing accounting problems if they are ever going to be solved in a permanently satisfactory manner. They cannot be disposed of by spasmodic executive activity or help called in from outside, which must eventually be dropped in favor of those relied upon to continuously steer the accounting ship.

I close with the thought that you return home with the firm resolve to better the status of your accounting people, giving due recognition to their outstanding importance in the economic management of the modern utility business.

Building for the Future in Residential Sales

By Davis M. DeBard

Vice-President, Stone & Webster Service Corp., New York, N. Y.

An Address before the Second General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1938

IN 1937 residential sales amounted to only 17 per cent of the total kilowatt hours sold in this country. Therefore, I suppose I should not feel that my assignment to talk to you on that subject is of much importance. Certainly, it is not anything about which *you* could be expected to be wildly excited. But perhaps the reason I have the assignment is because somebody knew this to be a subject on which I am most enthusiastic. And that enthusiasm is sincere. My one hope is that I can communicate some of it to you. I believe this subject is the most important one we have to deal with. Frankly, I believe our very existence depends upon how we treat it.

I do not wish to assume the role of prophet. Neither do I profess to be able to submit any positive promotional plan that will be the answer to the electric sales manager's prayer. I do, however, wish to discuss freely and frankly some of the problems that confront us as utility executives. The ideas and suggestions I have to offer are not all my own. I have culled them from all the best sources I know. I offer you, without shame, the confession of Mr. Kipling in his introduction to Barrack Room Ballads:

"When Homer strummed his bloomin' lyre
He'd heard men sing o'er land and sea;
And what he thought he might desire
He went and took the same as me."

And so, in this discussion, I hope we may find food for thought and that, as a result of our thinking, we may all be able to chart a sounder, more profitable course for the future.

We all know that our residential customers last year bought only 17 per cent of the kilowatt hours we sold. But the facts that interest me are:

1. Those customers comprise 80 per cent of all our customers;
2. They provide more of our revenue than any other class of customers we have;
3. They all bring more grief; they are the basic source of our rate and political interference difficulties.

To be sure, our 260,000 large light and power customers used three times as many kilowatt hours in 1937, but for that we received 135 million less dollars. And, in the last ten years, our gain in residential revenue has been 58 per cent compared with a 29 per cent gain in revenue from large industrial customers. Further than that, we have not begun to scratch the surface of residential potentialities. That is one reason why I am enthusiastic about building for the future in residential sales.

MR. DEBARD

A two-year-old child can push a button and, in perfect safety, have the benefit of all the research of the last four generations. But what good does that do us if all we get, after four generations of selling, is a national average of only 805 kilowatt hours per customer per year? Is there Room to Grow? I think there is.

So—we have a business that is already producing a substantial revenue. And we have existing customers in ample number who have not yet been sold the merits of the service we have to offer. The future we face is replete with opportunity. But, gentlemen, we must plan for it if we are to profit by the opportunities it presents. I get the feeling that we are not going about this business in the right way, for two reasons:

1. There are several companies operating in territories with a large percentage of people in the exceptionally low income brackets, yet, they show an average residential use of well in excess of one thousand kilowatt hours annually. On the other hand, there are a large number of localities with an annual usage of well below five hundred kilowatt hours.

2. The attacks that are being made against our industry. There must be something wrong.

During three of the last four summers I have visited the principal countries of Europe. The thing that amazed me most in visiting the homes of the workers, especially in England and the Scandinavian countries, was to find them so appreciative of the service they are getting and their belief that the costs are reasonable. In fact, it is not uncommon to have people say, "Electricity is very cheap in my country but in the United States it is high, I am told." As a matter of fact, you know and I know, that on a comparable basis, in terms of wages earned, electricity is cheaper in the United States than in other countries of the world. Yet, we have not been able to make our people believe that. I wonder why? Have we been too busy with our research and operating and financial problems to devote sufficient time to the job of selling our customers the *use* of electricity and the great value they receive for their dollars? Or, are we too smug in our belief that a continued lowering of rates is the whole answer to satisfied customer relations? Have we perhaps not been too prone to pat ourselves on the back when we made a million dollar rate reduction, when, as a matter of fact, the saving to the average residential customer was seldom more than just a few cents per month? Have we not remembered our beneficence long after the customer has forgotten there even was a rate reduction? We have sold them gadgets by the million and then all they get is a bill once a month which they think is too high. We sell them appliances and bill them for kilowatt hours. And there is no relation between the two. That is where the trouble lies.

Some day the industry must wake up to the fact that so long as we bill kilo-

watt hours, we must sell the service these kilowatt hours represent. If we are going to build for the future in residential sales right, there is where we are going to have to mend our ways.

Did you ever try to sell an electric motor? How many of you have ever done that? And what did you do? Did you say, "Mr. Jones, I have an awfully nice motor I want you to look at; it has beautiful smooth lines; you'll like the finish; it's a lovely forest green; and it runs on 220-volt, 60-cycle current without making a sound. It has a nice bright shining shaft with a keyway already in it. You can fit a pulley or a gear on that shaft and make it deliver fifteen horse power. Wouldn't you like to buy one of my nice motors?"

Is that the way you sold motors? Certainly not! You said, "Mr. Jones, I've just been through your shop and calculated a way for you to save $1,200 a year in power cost alone. In addition to that, you can better use your floor space, improve your production line, do away with shafting and pulleys. And, you will have in addition, a cleaner, safer, more efficient plant in every way. I propose to accomplish that by installing six of our special M T 4, 220-volt, 60-cycle, direct drive motors." You got the order by selling the *use*, not the motors.

How many of those customers complain about the rates? They are sold on the use and they know what they are getting for the money they pay. In the Industrial Division, we, as power men, had to sell the *use* of electricity. Then we provided the motors to do the conversion act. Today, our power men are continuing to promote the use of electric power. Few, if any, of our companies are attempting to promote the sale of electric motors as such.

Should we not have more "power" salesmen for the home? For the future, shouldn't we think more of selling the service as we sold the power idea in the factory? Certainly, our customers must have more spigots if they are to drink of this great fountain of energy which can be made so much a part of their everyday lives. But we can't sell those spigots as such. We must sell the convenience and the use and the economy of them.

And, I maintain, that ours is the responsibility of promoting the use of those spigots just to hold our own in this business. That is aside from any consideration of increasing our load because there is a grim spectre we have to face called Load Mortality. Strangely enough, he is not a ghost that haunts us because our customers are dying but because our business is a growing, living, virile thing producing more and more efficient appliances every day. Research and development in manufacturing processes contribute a progressive loss in load for us unless we capitalize on the very factors that produce that loss and go out and sell more vigorously and more efficiently to offset it. I don't know how I can bring that point home to you more effectively than to quote from a recent article on Load Mortality by C. E. Greenwood, Commercial Director of EEI, in which he said,

"Looking backward there is no better example of the bearing of research and efficient production on this load loss problem than the incandescent lamp. Progressively, the wattage per unit of candle power has been decreasing. A 32-candle power lamp of twenty years ago used 60 watts. Consumers are getting that equivalent in illumination today at 20 watts or 60 per cent less.

"At the present time we have a new type, more efficient motor on the electric refrigerator. In 1933 the energy output of the household type was approximately 600 kilowatt hours per year. An equivalent service is given the electric consumer now at approximately 360 kilowatt hours, or, 40 per cent less than five years ago. The modern electric range does a more efficient cooking job, and whether sold as a new service, or as a replacement, our former estimates of energy output through it must be revised downward from 15 per cent to 20 per cent.

"The job of replacement will go on through the entire list of equipment. Some of the old apparatus is serving well, even to the reconditioned washing machines, vacuum cleaners, and other devices. But thousands go to the junk pile each year, every one of which must be replaced by vigorous selling."

It has been customary in our industry for many years to estimate that potential kilowatt hours derived from the sale of household appliances. That is, we estimate the probable consumption assuming each appliance will receive "normal" use. The net increase in energy used per home usually falls far short of our calculations, unless we have reasoned with Load Mortality. We should ask ourselves "What is the *net?*" in connection with LOAD, the same as we do with revenue.

So you see that, just to hold our own, with the customers we now have and the appliances they now have, we must do a vigorous job of promoting the use of new spigots to provide for a steady flow of juice. Therefore, our problem of building for the future becomes even more difficult. And what is the answer?

I find it, gentlemen, I believe, in an analysis of the bills of a wide variety of customers. You will not find it in balance sheets or in profit and loss statements or in graphs showing gains in revenue or output or numbers of customers. You will find it in spread curves showing the consumption per customer in each bracket from 20 kilowatt hours per month up. When you find, as I am sure you do, that over 70 per cent of your customers use less than 50 kilowatt hours per month, the answer becomes apparent. You have a lot of unsold customers that should be sold more. And there lies the real opportunity for building for the future in residential sales.

Just how you are going to do it in your own locality will vary from the way others will accomplish results. You can probably point to the fact that that same 70 per cent embraces the 70 per cent with incomes of less than $1,500 per year. But if you do, I will also point to the fact that it includes most of the 70 per cent that own automobiles and radios. The point is that they are sold on the *use* of automobiles and radios and they are not sold on the use of the excellent, valuable, indispensable service we have to offer them. They think they can get along without it. Actually, in many instances they could do themselves more good through the benefits of electric service in additional health and comfort in the home than they can by the supposed economies they attempt to effect by doing without it. We, I believe, must include in our plans for the future some means of bringing home, particularly to the low income customer, the relative value of additional electric service for his family whether it be extra lighting facilities, a washing machine, or just a new electric clock.

Our customers vary greatly in purchasing power. Spigots should vary greatly in style but be of good quality to serve best the customer and the utility alike. For example, a spigot can be made of silver or of galvanized iron or of cast iron, at varying degrees of cost, but all be quality appliances rendering good service. We should urge more utility and manufacture research for ways and means to bring our service within

reach of that large low income group to an ever increasing degree.

There are something like 22 million wired homes in this country today. Seventy per cent of these make a total of approximately 15 million. These average a use of less than 50 kilowatt hours per month. As a matter of fact, the average for this 15 million is probably not much over 30 kilowatt hours per month. If this group could be induced to use only 2 kilowatt hours more —10 cents per month in this bracket, the total would amount to 18 million dollars a year. And that would be mostly net because it would require no addition to plant or service. All it would require would be the selling of the *use* of the existing installation and equipment.

In connection with the larger service of this low income customer, we should consider for a moment the matter of rates. Residential rates have been constantly coming down and with them have come incremental rates—until last year, when for the first time, the incremental residential rate increased. Why? Larger use of service by low use customers. What does this mean? It means lower rates and better incrementals, with the result that additional residential load is sold at a better return.

Of course, with those customers we have to consider their problem of capital investment. But we should make it our problem too because it means potential business for us. Take the refrigerator market for example. There are at least 10 million wired homes today that do *not* have electric refrigerators. Of these, I am assured from actual test surveys, there are 4 million that have a credit standing of $100 or better. With a modern refrigerator requiring only 360 kilowatt hours per year, don't we owe it to these people to find a way of providing them with this health-promoting, money-saving appliance?

Leading manufacturers state their refrigerators have attained a degree of mechanical perfection that should make their useful life 15 years or more. What an opportunity awaits a proper finance plan—one that will put refrigerators in four million homes, double the annual utility revenue from these homes, save money for the consumer and give us an added load of a billion and a half kilowatt hours annually with a wonderful load factor.

And while we are on the subject of load factors, let me point to the fallacy behind the efforts many companies have made in trying to push electric range sales alone. Lured by the vision of high annual consumption they forgot that demon, low load factor, and soon found themselves selling a lot more kilowatt hours for no more money. Not only was this power sold in the low rate blocks but the demand increased to the extent of requiring additional plant. And that was bad. Even the off-peak water heater alone is bad. It loses its economic value to the operating company because it uses current at such low rates. The only answer to these appliances is a combination of the two. According to a study made by Constantine Bary of the Philadelphia Electric Company, the best combination from a company point of view is a ratio of two ranges to one off-peak time-controlled water heater.

Some day, I prophesy, WATER WILL BE HEATED ELECTRICALLY AT ITS POINT OF USE, with two or three water heaters in each house, thus increasing efficiency, lessening amount of piping required, more hot water for less kilowatt hours, less cost per water heater unit.

However, my feeling is that we have another important thing to consider if we are going to build soundly for the future; if we are really going to develop the full potential value there is today and for tomorrow among the unsold, the low use, the low income group of customers.

Some companies I know have discovered the way to do just that. They have in effect a plan called the District Representative Plan. It is doing the trick and making satisfied customers in the bargain, customers that believe in the electric company not as a necessary evil but as a real public utility in the true sense of the word, working for their benefit and one they want to see prosper. Whether or not you are all familiar with it, I am going to take a moment to tell you something about how well it works.

It is not new. It started fifteen years ago and more and more companies are finding its application invaluable. None that I know of would think of giving it up. With one properly trained man representing the company intimately to each group of approximately a thousand customers, you are bound to set up a personal relationship with your consuming public that will build sales for the future and keep your customers sold. Let me cite a few of the things the District Representative Plan has accomplished in one company. I quote from an article in *Electrical World* of May 21 by J. H. Shearer, president and general manager of the Pennsylvania Edison Company, Altoona, Pa. I wish I had time to read the whole thing right here and now. I recommend it to you as a bit of case history on the subject of building for the future. Here is a company with annual residential and small commercial billing of one and a quarter million dollars in 1936. The District Representative Plan was put into effect in the early part of that year. By December, 1937, revenue had increased 7½ per cent.

Bill delinquencies of 30 days dropped from 30 per cent to 8.5 per cent.

Charge-offs for the year dropped from $11,000 to $3,200.

Disconnects for non-payment from 431 in April, 1936, to 19 in December, 1937, 13 of which were reconnected the same week.

Sales leads turned in jumped from 545 in 1936 to 821 in 1937.

Sales resulting from these leads increased from 15.5 per cent to 25.9 per cent.

That is building for the future in residential sales. The District Representative has first hand knowledge of the conditions under which his customers live. He knows their personal habits, the appliances they own, and their financial standing. He makes minor service repairs so annoying to the customer. There is assurance of better understanding between the consumer and the company. That is evidenced by the fact that, as Mr. Shearer points out, during 1936 there were no formal complaints and only five informal complaints before the Public Utilities Commission. During 1937 there were only two informal complaints.

While we are on the subject of complaints, let me say here that building for the future requires building sound public relations and sound public relations demands the elimination of complaints. If you want to keep your business; if you want your business to grow; if you want public opinion to rise above the specious twaddle that is handed out today in favor of public ownership—get rid of all complaints. Don't be like one large company I know of that crowed because an analysis of consumer complaints showed 71 per cent not traceable to utility service faults.

To me it makes no difference what the percentage is. The number of complaints is the important thing and, if

(*Continued on page* 286)

Ten Ways to Make Your Customers Like Your Company

By J. E. Davidson

President, The Nebraska Power Company, Omaha, Nebraska

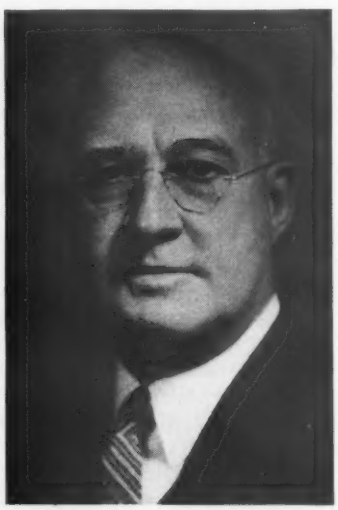
An Address before the Second General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1938

OUR electrical industry, and, indeed all American business, is today faced with an inquisitive and impatient public. The public mind is also suspicious, dangerously so. It seeks to know. Yesterday, in almost every community, a mere handful of people could be characterized as the informed, the leaders of thought; but today, through national radio networks and other mass media, members of all classes acquire a fund of information, much of which is erroneous. People now have wavering opinions, easily influenced by the tremendous amount of information that reaches them, through one channel or another, every day.

Never before, in your lifetime or in mine, has mass thinking altered so quickly; reacted with such speed to daily events and current stimuli. Like restless sands on an open beach, public opinion shifts suddenly. One radio speech, on a Sunday afternoon, arouses the entire nation. Tomorrow, the attitude of the public toward your company may be quite the reverse of what it is today. Next week or next month, what will be that public's viewpoint?

What does all of this mean to you and to me? It means that we must be more alert than ever before in maintaining continuous contact with the minds of our customers; that we must grasp every opportunity to influence this quick, receptive attitude of public thought. It means that we must keep abreast of these rapid changes, in order to recognize and correct all inaccurate information that has been, and is being, disseminated. It means that we must strive to improve our methods of dealing with our customers so that we may attain their stronger friendship. It's a poor rule that doesn't work both ways, and, if opinion can be swayed against us, it can be swayed toward us.

Our industry was among the first to recognize the importance of proper public contact and adequate public understanding. The National Electric Light Association established a Public Relations Section 18 years ago. I had the honor of being its first chairman. With the organization of the Edison Electric Institute, however, it was thought best to abandon public relations and public information activities as an association. No—the subject of public relations is not a new one to electric utility companies, although recently it has been termed by experts "a new science of business."



MR. DAVIDSON

Certainly, today, a large part of American industry has boarded the public-relations band-wagon. That the attention of American business generally is now engaged by this absorbing subject is evidenced by the fact that shelves of book stores are lined with reading material dealing with the matter. I am sure you have all read Dale Carnegie's book "How to Win Friends and Influence People," and know of its great popularity. Countless articles in national magazines and newspapers, numerous network radio programs carry messages indicative of the interest now manifest in this important topic.

It is innate in every man to want the respect and approbation of others—to seek friends. His success and progress in life are largely dependent upon the conversion of this desire into an actuality. Likewise, the successful existence of any business is contingent upon public good will. The Aluminum Company of America shows its appreciation of this fundamental principle by a recent fact-telling national advertising campaign. Industries of our country are at last realizing that the public likes to transact business with companies whose commodities and services are superior, and whose executives and employees are friendly.

And so today a new and spirited competition is being waged. Not only must we compete with business concerns of other industries for our share of the consumer's dollar, but we must also vie with them for the public's good will.

Besides business, another formidable suitor for the public's favor has made its appearance. This zealous rival is the Government. Politicians for generations have appreciated the value of public favor, and, by long practice, they know well how to win it. At our industry's peak in public relations building efforts, we did a piker's job compared to that which the politicians are doing today. We have heard a great deal regarding the fomenting of class hatred; but this is nothing beside the hate engendered against our industry by the clever manipulation of loosely made statements, many of which are unsupported by honest facts.

The situation thus created presents a real problem in regaining the good reputation that light and power companies deserve. It is a grave problem, because the electrical industry is practically dependent for its success upon public trust. We cannot hope to expand and prosper unless we hold the esteem of our customers and the confidence of the investing public.

Therefore, it should be our first concern to seek out and eliminate to the greatest possible degree any mistaken ideas or ill-feelings on the part of the

public, and to win from our customers a sympathetic understanding. With understanding, we shall also gain the respect and loyalty that we merit.

Above all, we must not sell our customers short. True, all of us have had trying times, and often we have been dubious of the fairness of the public; but let us continue to have faith in the sound thinking and the justice of the American people. Let us never lose that faith.

I do not appear here as a public relations doctor. I am here simply as one of the veteran patients, who has been undergoing treatment for more than a third of a century, to discuss the diagnosis. I have no general panacea to offer, because each company's public relations problems call for individual study and planning and effort, by every member of the organization.

But, regardless of what prescription you use, you must win from your customers their confidence—and then hold it. By so doing, you will build a protective bulwark against unfair attack and also increase the use of electric service.

For, if our customers dislike us, they quite naturally accept without question any prejudicial and unfounded statement. The unfriendly customer is slow to make use of our service. He uses electricity sparingly; he rushes about the house turning off lights and whatever appliances he may have.

A survey made several months ago by *Fortune* magazine showed that, in a community where the power company had poor public relations, the customers interviewed considered the rates high, even though their rates were actually very low. In another city, where the electric company had excellent public relations and higher rates, the customers lauded the company and referred frequently to their cheap electricity.

Good public relations should have a vital place in every electric utility organization. Every officer and every employee of every power company—from the president to the meter reader—should sing the same tune, should interpret the company's public relations policies with a crusading spirit that can come only from sincere convictions, proper training, and accurate knowledge.

Of all complimentary letters received by a certain electric utility company in 1937, less than 1 per cent contained commendatory remarks regarding its low rates or good service. Ninety-nine per cent of these letters referred to some thoughtful deed of an employee or some courteous and considerate act resulting from the company's policies. We all know that it is the little things, done continuously and sincerely, that count in making friends.

I am reminded of a short poem from the gifted pen of Edgar Guest. Mr. Guest wrote—

> The reason people pass one door
> To patronize another store
> Is not always because the busier place
> Has better drugs or silks or lace
> Or cheaper prices; it largely lies
> In pleasant words and smiling eyes;
> The true magnet, I believe,
> Is just the treatment folks receive.

You can't check the policy of public relations with a slide rule; it has no set formula. And yet, it is something that you can actually feel. You can write down your program on paper, and there is a genuine thrill in seeing the written plan take form; in watching with satisfaction as the moulding takes place.

Furthermore, it does us all good to slip on a pair of public relations spectacles and check our perspective, which is often unconsciously lost; to take a walk around and view carefully our numerous operations, to see ourselves as others see us. Some of us may have become a little nearsighted and may need some viewpoint corrections.

What the members of your downtown or country club think of your company means very little. Whether your company is held in high esteem by the rank and file is what counts. This fact was well demonstrated by a poll made by the Institute of Public Opinion in August, 1936. This poll showed that among telephone subscribers, Landon polled 59 per cent of the votes; among automobile owners, Landon polled 56 per cent of the votes. If his election had depended upon these two groups, Landon would now be President. But, among other classes the sentiment was different. This provides a moral—with your message, reach all of your customers.

It is easy to be general. It is easy to say, "Be courteous, give good service, etc." But I should like to be explicit. Let me present to you ten ways to win public approval of your company.

Number 1—Every company must dedicate itself to even greater civic responsibilities. True, electric utility companies have always had a civic-consciousness, but we must intensify our efforts along these lines. We must make every citizen of every community we serve feel that we are "part and parcel" of that community. The need is greater now than ever before for *local operating authority*. Local managers must be local managers in fact as well as in name. Preston S. Arkwright made a statement a few years ago, which left a very favorable and indelible impression. He said—*"We are citizens wherever we serve."* In an address based on this theme, Mr. Arkwright stated: "The spreading of our companies out of the congested big cities into the small towns and the hamlets makes us citizens of every place we serve, makes our every place of business our *principal place* of business. Devotion to their upbuilding creates in us a passion for the well-being of each place we try to serve."

Number 2—Not only must we be civic-conscious, but we must assume community leadership. The business of your company is not confined to producing and distributing electric energy. You owe to the communities you serve, greater civic participation than the average citizen.

Touching upon leadership in a recent address to public utility men, Edwin L. Bernays, a public relations specialist, commented as follows: "One certain way to change the public attitude towards you and your business is for you to assume leadership. The public wants and desires leadership, and responds to it. To revalidate yourselves in the public eye, it is important not only to assume leadership in your own field, but to establish leadership in fields of activity that have no direct connection with your particular business."

Number 3—Humanize your company. Of what does your company consist? Of turbo-generators, poles, real estate, ledgers, desks, and so on? These are merely the "bare bones" of an electric company. More important are the individuals who constitute the personnel. These persons must bring to their daily work not only active brains, but warm hearts filled with concern for others. They must be inspired with a genuine spirit of public service. Only then does a company become a living, breathing entity.

Number 4—Be courageous and aggressive, but be tolerant. Your company has a good story to tell. Tell it well, but give to the opinions of others the consideration you too desire. If people have been misled, convert them. On this point, the late Theodore N. Vail, when President of the Bell Telephone System, expressed himself well. Mr. Vail said: "Public opinion is based on information

and belief. If it is wrong, it is because of wrong information, and consequent erroneous belief. It is not only the right but the obligation of all individuals or aggregations of individuals, who come before the public, to see that the public has full and correct information."

Number 5—Know what your customers are thinking. Learn the opinion of the public, in the territory you serve. Not only will knowledge of this opinion provide you with valuable information as to the trend of thought, but it will furnish you also with the reason for that trend—and that is even more important. Find out what your customers like, and do more of it; find out what they don't like, and do less of it.

S. H. Walker and Paul Sklar, public relations experts writing in *Harper's Magazine,* January of this year, stated: "Business leaders are asking their advertising men not merely to tell the public what to think about them and their products; they are asking the advertising men, with equal insistence, to tell them what the public thinks, what it wants, how it feels, what are its hopes and aspirations and ideals. Our great business democracy is becoming more truly democratic. The customer has become the real Chairman of the Board of every progressive enterprise."

Number 6—Check carefully the form letters that your company mails out. Perhaps this appears a trite suggestion, but you may find, to your surprise, that some of your form letters have not been changed for the past five or ten years. Put your form letters in tune with the modern way of thinking. Give them up-to-date personalities. Arthur C. Kudner, speaking before the National Association of Manufacturers, said: "In too many cases when the president of a business corporation writes, his syllables freeze in multiples and he vocalizes like an institution."

Number 7—It's good business to practice selectivity in load building, but it is very poor business to practice selectivity in public relations building. See to it that your company's messages reach all of your customers.

Number 8—Maintain careful supervision over your emergency calls. We might sometimes overlook this important department because practically all emergency calls occur after office hours and on holidays. These calls will gain friends for your company—if they are cared for with courtesy and dispatch—because, when customers put in emergency calls, they are in trouble, and they greatly appreciate prompt and efficient service.

Number 9—Intensify the good work you are doing among your dealers and contractors. Elbert Hubbard once wrote: "Cooperation, not competition, is the life of business." Bear in mind that one dealer-knocker can tear down your public relations work as fast as you can build it; for your customers accept as authoritative, statements made by electrical dealers and contractors. Make of these dealers boosters, rather than knockers.

Number 10—Show a genuine interest in your customers, not for a day or a month, but year in and year out. There are many ways to indicate such interest. They demand long hours of arduous work, but the recompense is great.

For example, recognize happenings of importance to your customers. When a man in your community is honored in any fashion, he greatly appreciates your recognition of the event.

I know of one company that shows keen interest in its customers by mailing out attractive cards commemorating various holidays. For example, on Armistice Day a card reading, "That the World May Never Forget Your Sacrifice," was mailed to the local War Veterans. Other greeting cards sent out were—A Columbus Day Card, "In Honor of a Great Man," to a special list of Italians; a Christmas card, "May Abundant Peace and Happiness be Yours," to the leading business men of the community, and an Easter card, "Easter Greetings," to clergymen, YMCA and YWCA executives and Church Council groups.

Another company watches carefully the openings of new places of business and acknowledges the occasions with flowers or letters.

These are only a few of the things you can do to personalize your company to the public. Doubtless you can add many more.

In closing, may I leave with you this thought: A man who has within himself "the gift of Friendship" is always surrounded by loving, loyal intimates. Likewise, a business concern that is reasonable, fair and friendly draws unto itself the regard of its customers and the support of the general public. Let us resolve to imbue each and every member of our individual companies with a genuine feeling of selfless service, for that is the basis of true friendliness. This work requires effort and concentration, but it offers untold rewards. Let us never cease to appreciate its importance, or, in the words of our immortal President, Abraham Lincoln,

"Public sentiment is everything. With public sentiment, nothing can fail; without it, nothing can succeed."

Building for the Future

(*Continued from page* 283)

there is any difference, I say we are better off if the complaints are due to our own errors, which we can admit and eliminate, than if they are due to consumer misunderstanding.

Don't you realize the far-reaching effect of any failure on the part of the public to comprehend our efforts and our motives? It is that pitiful lack of understanding that makes them criticize *us,* as operating men, because somebody made fifty million dollars in 1929 through the sale of holding company stock. And they think they are still paying for it today in excessive rates. That's why I say, don't stop even for a moment in your efforts to increase public understanding of the good job you are doing.

We know that residential sales are the most important hope we have for the future stability of our industry.

Let me leave with you in closing the following points which are vital if we are to build soundly for the future in residential sales.

1. We must hold our present revenue against load mortality due to progress in the industry.
2. We must find our market for expansion of service among the unsold, the low-use customers of today and the new building developments of tomorrow.
3. We must develop our market with careful attention to the load factors involved lest we find ourselves in the anomalous position of having increased our kilowatt hour output at a loss in dollars of net due to excessive investment requirements.
4. We must hold our market by selling the use, not just the appliance, by the development of sound public relations built on our own intimate understanding of the public's needs, and the public's appreciation of us.

If we do these four things with the same intelligent zeal with which we have tackled our problem of research and development, with the full appreciation that we must build load to provide a return in investment, I see no reason for any anxiety as to the future.

Cost of Plant

By A. H. Kehoe

Vice-President, Consolidated Edison Company of New York, Inc., New York, N. Y.

An Address before the Second General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 7, 1938

THE cost of electricity has received so much public attention in recent years that discussion of any of the individual elements entering into costs should be carefully circumscribed to be certain that existing confusion concerning the subject will be reduced thereby rather than increased. As a broad subject, of course, the cost of electricity to the consumer must include not only the amount paid to the utility for electric service, but also the amount for utilization equipment or devices and for utilization wiring. This latter money, for the large part, is capital invested in wiring and equipment; but some part of it is for maintenance of such utilization system. While the tremendous amount of money in the aggregate that is required for consumers to pay for utilization equipment merits every one's attention, this discussion will be limited to the part paid to public utilities for electric service. Last year, this revenue was about $2,180,000,000—a gain of 6.7 per cent over 1936.

The costs necessary to provide our service have to be recovered from the service supplied, and since as regulated public utilities we are to charge rates that will bring in this amount, every one is advantaged by reduction in such costs. In making this review, trends will be indicated where possible reductions might be expected in the future. It will be assumed that the well-recognized means of making past reductions by increasing and diversifying the use of the service will be continued; for electricity production and use, to a greater degree than most other materials or services, reacts to the mass production principle of greater use producing lower unit costs.

If the total expense of rendering the service is subdivided into major items; labor, supplies, and taxes make up over half of these costs. In fact, there remains only return of investment in plant and certain minor miscellaneous expense items after these other major items have been subtracted. For the industry as a whole, electricity return on investment in plant and property amounts to slightly more than one-third of the total received from the public for the service, while the remaining part provides for these other expenses for labor, supplies, taxes, and retirements or depreciation. Such conditions make for a rigidity of financial structure which is sometimes not recognized. With present plant investment of approximately 13 billion dollars and gross revenue of slightly more than two billion per year, the resulting return on investment can be subject to only very minor variations if the business is to remain in a healthy state and be able to finance betterments and expansion of the service. Because of this tremendous sum of 13 billions required to be invested in plant to carry on the business, as compared to the relatively low gross revenue each year of two billions, which results in a turn-over only once in over six years, it is also of great importance if minimum cost of electric service is to be obtained, to be certain that costs of both inside and outside plant are kept at the optimum level.

MR. KEHOE

It should here be noted that once the physical arrangement of the plant is fixed, the principal items of expense like labor, supplies, taxes, and return on investment are set, to a great extent, by conditions outside of the utility itself. In fact, on such items the utility exercises only minor control, except as more use can be made of the plant, thereby taking advantage of mass production. This is because a fixed plant not only results in fixed investment with a requirement that there be earned on it a definite and clear return each year as return on investment; but such a plant, by its design, will require the use of a fixed amount in labor and supplies to produce and deliver a fixed standard of electrical service. Varying plant designs, of course, will allow variation in the annual expense chargeable to the items which have been discussed. By increasing the investment sufficiently, it may be possible to greatly reduce either or both the annual expense for labor and supplies. But if this is overdone, the necessary return on investment and taxes and increased provision for depreciation or retirements which would be required as an item of expense would certainly outweigh any saving in labor and supplies. Once an investment in plant has been committed, there is established with certainty, definite amounts of labor, supplies, etc., which must be expended to supply the service for which the investment was made. Thus, the study of plant costs entails much more than the relative cost of some particular type or kind of installation. Under normal circumstances, any addition or changes made will be but an incremental change as compared to the then existing system; so that Plant Costs are usually controlled by past trends, particularly where the amount of increase in capacity to be provided is small relative to the existing capacity.

Such trends have been particularly noticeable since 1930, when with capacity of about 32 million kilowatts the total investment in plant averaged $362 per kw of net generating capacity. A maximum of over $373 was reached in 1934; and in 1937, with 35 million kilowatts of station capacity, investment had decreased to $369 per kw. This increase in investment per unit of net generating capacity had been going on over a period of years prior to 1934,

and it was particularly rapid during the period of expansion in the decade commencing in 1920. At that time it was only $325 per kw, or $44 less than last year.

From the analysis of cost of the various divisions of plant, which will be discussed later, it now seems reasonable to expect that the unit cost of total plant investment will be reduced if additions in capacity are required under circumstances existing at the present time. It must be noted, however, that up to date the experience has been that increases rather than decreases have resulted in the average unit cost as increases in capacity have been required.

While in the last seven years the rate of increase in capacity required per year has been small, there have been periods in the past when increases in plant capacity were relatively large. The periods when increases in capacity will take place are usually set by the actions of the public, who establish increased utilization demands either with new equipment or by increased use of existing equipment. As there is no useful purpose in providing plant in advance of the reasonable probability of its being used, it is during periods when rapid increases in demands for the service are made that corresponding large increases in plant capacity are required. At such a time, the cost of new plant is of extreme importance, not only because of the drain on resources to meet the increased demand but also because of the commitment during the plant's useful life of annual fixed charges and operating costs. Such a situation is more than theoretical, for it seems certain that the next period of normal prosperity experienced in the country will bring about a large increase in utilization requirements, and that at such a time plant capacity will have to be rapidly expanded in all parts.

Doubling of capacity to meet increased demands in the span of a few years has occurred again and again in the industry. The most recent case was in the seven-year period from 1924 to 1930, when the capacity of the privately-operated electric supply companies in the United States was about doubled and the total investment in the properties was slightly more than doubled. In the following seven-year period 1931 to 1937, it has been possible to meet the demands of consumers for electric service by providing about a 10 per cent increase in both system capacity and investment over 1930. In the latter period, about $190,000,000 new capital had been used on the average each year in comparison with an average of $832,000,000 per year during the earlier seven-year period; that is, with a ratio of yearly expenditures before 1930 about $4.40 for every $1.00 per year since that time.

Concerning the above prospect for the future growth, there is a widespread expectation in the industry that during the next period of national prosperity, new uses of electric service and, more particularly, expanding consumer acceptance of the relatively large capacity utilization equipment of types now in use will very likely make it necessary to provide additional system capacity in, say, a ten-year period, comparable in amount with that provided up to date. Such a sustained growth would represent an average annual increase of less than 7¼ per cent per year. Using present unit costs for an estimate, this would result in total plant investments, at the end of the period, of 26 billion dollars. It would require, at these present costs, annual net capital additions starting at approximately a billion dollars per year and increasing to about one and three-quarter billion per year at the end of such ten-year term. Our purpose in discussing such possible rate of growth is to point out trends which may have a determining influence on the amount and use of the new capital funds that would be needed to provide system capacity for a new decade of prosperity, similar to that from 1920 to 1930.

The capital used in establishing additional power stations, transmission lines, substations, and distribution systems during this last period of rapid system expansion, and the total investment now in these facilities, indicate that cost trends for each of the above major divisions should be analyzed separately. With the record of the present as a starting point, it is illuminating to make a rough approximation of the future requirements by making allowances for circumstances which now seem to be controlling in each particular case.

Of a total of approximately 13 billions of plant investment, there was invested in our generating stations at the end of 1937, over $4,800,000,000, the installed capacity being about 35,000,000 kw. With an investment of less than half of this amount in 1920, the unit cost per kw of net installed capacity had been reduced from $162 in 1920 to $138 in 1937. This investment can be divided into two parts—the hydro and the fuel-burning stations.

Hydro-generating capacity has been maintained at slightly more than one-fourth of the total since 1920. At present, it is approximately 27½ per cent of the total, and the investment in hydro stations is about 37½ per cent of the total invested in generating stations. This hydro capital on an average unit price per kw installed has been reduced from $250 per kw in 1920 down to $187 per kw in 1937. Such results were to be expected, as the water power sites developed since 1920 were only the more promising ones and interconnection has made it feasible to install more capacity for generating secondary power than was formerly the case. However, there have been experienced increases in transmission and substation investment unit costs per kw of installed generating capacity which have offset the reduction just mentioned, and it now seems likely that very few of such developments will be undertaken in the immediate future, as the burden of additional investment for transmission lines and substations to bring to market the power produced makes most of the possible ones uneconomical.

With reference to steam generating plants, it is well known that great improvements in efficiency were effected in the 1920-30 decade. The higher efficiency obtained from year to year with units of large capacity and the ability to make use of these larger sized units as system loads increased, caused many to believe that early supersession of much of our power plant equipment was to be expected. Certainly for a while, these developments pointed to higher depreciation rates for steam generating stations than the experience of the industry had indicated prior to 1920. However, in the past few years the necessary technical achievements have been realized for the successful utilization of steam temperatures and pressures much higher than was possible when most of the present available capacity was installed. This has changed the outlook entirely. Materials and processes have been perfected under service conditions, and it is now possible to add new capacity at reasonable costs, with only moderate retirement costs, and at the same time make a very appreciable improvement in the operating economy in a large percentage of existing steam

power plants. This is called the "topping turbine" type of steam station.

In general, the arrangement is to install in an old low-pressure station modern high-pressure-high-temperature steam boilers and topping turbines, which are designed to exhaust steam with suitable characteristics into the existing steam pipes so that this topping-turbine steam can be utilized to operate the entire turbo-generator capacity in the station. The original boiler installation is no longer required, since the steam from the new boilers and topping turbine exhausts into the main steam header of the station, making it unnecessary for the former boilers to operate to obtain full station capacity, including the new capacity installed. Expansion of station capacity by such process perpetuates the use of the major part of the present station investment, since the installed steam headers, turbo-generators, condensers with their auxiliaries and electrical capacity are all equally useful as would be entirely new capacity. The efficiency of the station is also greatly increased by such an installation, since the topping turbine losses are very low as its output is generated without the usual condenser losses. It thus appears very probable that the older stations will be brought up to present-day standards as rapidly as new increments of capacity are required to supply such demands. And, except for existing boilers, no depreciation or retirements will be indicated, as the new capacity in combination with that previously installed will result in total capacity which can be expected to have a useful life as far into the future as that of any new capacity which could now be installed in an entirely new station. Since the incremental gain varies inversely with the steam pressure of the existing station when equipped with topping turbines, this development will cause the older stations to be the first to be brought up to date on most of our systems.

The space required by modern steam boilers and high speed turbines per unit of output is so much less than that occupied by the older and less efficient stations that it is frequently possible to double the capacity of existing plants by the method described, at a unit cost for the new capacity considerably lower than it would be if it were necessary to build an entirely new plant. In view of this development and the prospect that a considerable portion of the new steam capacity needed in the next period of prosperity can be acquired by this method, it is expected that the new capital required to provide increased capacity will be less than would be necessary to provide entirely new generating capacity. Furthermore, since the cost per kw output of modern steam stations is less on the average than that required heretofore, it seems reasonable to expect that the new funds required for steam power plant expansion in the next period of activity will be less than was used in the period from 1920 to 1937 for the same total capacity. Average generating station costs per kilowatt of installed capacity, including both steam and hydro, have been gradually decreasing since about the middle of the 1920 decade. They were about $162 per kw in 1920, $141 in 1930, and $138 in 1937. During this entire period the average costs per kw of installed capacity for steam stations only were below this low of $138 in the year 1937 for combined steam and hydro stations. Steam stations averaged $125 in 1920, and since 1930 the cost has been from $5 to $7 less than in 1920. With the larger number of topping-turbine installations which are certain to be installed as soon as increased capacity is required, the average cost of generating stations for a kilowatt of installed capacity will be further reduced and a corresponding reduction may be expected even in steam station costs. The reduction in dollars in steam station average costs, of course, will be less, due to the present high cost of hydro stations and the increasing ratio of steam to hydro station capacity which is to be expected due to such costs. Doubling our present capacity in generating stations, using steam stations for the increment, if present-day prices are maintained, should bring about a further reduction in average costs from the 1937 average of $138 to between $125 and $130 per kw of installed generating capacity. There is also an improvement in station economy to be expected with increases in topping-turbine capacity. Total fuel consumption, of course, will increase but the rate in pounds per kwhr should continue to be reduced. This rate was more than 2½ lbs. of coal per kilowatt hour in 1920, 1½ lbs. in 1932 and 1.42 in 1937. It is estimated that by doubling present steam capacity that not over 1.2 lbs. will result as the national average.

In considering the logical plant divisions, transmission and substations are often combined owing to the prevalence of high-tension transmission lines and the substations for transformation which are required due to change in voltage. These both had a remarkable growth during the period from 1920 to 1930, and this development has been largely responsible for the rapid increases in the transmission and substation divisions of plant investments. From about 480 million dollars invested in transmission lines in 1920, the expansion of this type of plant was exceedingly rapid until 1930, when the rate of increase became more gradual. At present, there are over $1,800,000,000 invested in transmission. Similarly, sub-station increases went from 415 million dollars in 1920 to $1,600,000,000 in 1937. It now seems probable that future expansion of capacity will not require as large an increase in these investments as in the past.

The system development period which ended in the years 1931 and 1932 was characterized as an era in which small independent systems in contiguous localities were combined within the territorial limits of regional industrial developments into a single system, and also by the construction of relatively high-capacity transmission lines interconnecting regional systems.

The process of system integration has been carried out to the extent that hardly a single town, except in the sparsely settled sections of the country, remains with an isolated supply system which could be more advantageously supplied by being tied in with the nearest transmission system. In considering such ties, it is important to recognize that the economy and reliability of small power sources have also been perfected in recent years to the point that future investment for transmission lines serving isolated communities will not be justified economically under conditions which formerly made such ties necessary before the improvements in small power sources. It appears, therefore, that system interconnections growth will be relatively small, and that the new funds needed for this purpose in the future will be much less than in the past for comparable increases in new system capacity.

Aside from the above expansion in plant investments for transmission and substations necessary to bring about the present state of system interconnection, heavy expense has been incurred in making system adjustments for phase relation, voltage, and frequency standardization as were necessary to permit such

systems to be integrated. In cases where an appreciable difference in frequency prevailed before the interconnection, or where it was necessary to convert or modify the characteristics of the supply system, the required changes were a financial burden which will not have to be duplicated in the next period of growth.

The time diversity of loads on our systems will continue to be a factor in determining the economic importance of transmission lines interconnection systems. As the territorial limits of systems were expanded, the inter-system ties were utilized to advantage both as a means of improving the load factor on base load stations and to lower the reserve capacity costs. In the future, it is expected that the installations of lines to close the gaps between the extremities of existing systems will be all that is required in most cases. Therefore, the capital to be used for such purposes in the future is not likely to approach that used for system interconnections during the era of tying systems, to which reference has been made.

Distribution, including the services to the premises of our consumers, is the one subdivision of the physical plant investment of our companies which because of the quantity of equipment used and repetition of operations performed in rendering service should conform to the law of lower unit cost resulting from repeated operations. However, due to other developments which affect Plant Cost, the average experience has been that distribution system costs have continued to increase per kw of generating capacity installed. In 1920, the average was $57; in 1930 it had increased to $82; and in 1937 a further increase to $89 was experienced. While the dollars invested per kilowatt of generating capacity may not be the most favorable unit to use in making comparisons of distribution cost, it has an advantage in showing the weight which distribution investment has as compared to the entire plant. In 1920 it was but 17½ per cent of total investment; in 1930 it increased to 22.7 per cent; and then to 24.1 per cent in 1937. There is another criterion of the distribution system designer which is illuminating in noting trends of cost, although it is not to be considered as strictly rigorous; that is, the amount of distribution system investment per kilowatt hour sold. Our systems costs result in this factor being maintained at slightly more than 3 cents per kilowatt hour sold. The difficulty in allocating those kilowatt hours sold in bulk, which do incur the normal distribution charges, makes the above factor one to be applied with considerable caution. In the present case, however, I believe that it is one of the signs that our trends in distribution costs are not explosive in character but clearly need the closest supervision to be certain that we continue to have minimum possible costs for the high grade of service which is supplied.

In reviewing the causes of the continued increase in average distribution plant investment per kw of generating capacity, the fact should be noted that a substantial degree of standardization has been accomplished without lowering these average costs. Furthermore, the trend of prices for the materials and labor going into distribution plant will not account statistically for the increases. All show some variation; some down, the majority up; but taking into account the change in methods brought about by the standardization, it seems clear that we have not lost ground when installing like capacity under like conditions. The changes which have taken place I believe are due to the general expansion in the distribution field which has been taking place in all directions. We have expanded in number of customers, number of services, miles of distribution circuits and at the same time our existing customers have increased their demands in many instances to require existing services and the distributing circuits supplying them to be greatly increased in capacity. Such changes also have brought about superior types of systems in order to render high quality service, and this adds to the cost of distribution plant. As saturation in number of consumers services is reached, all changes brought about by growth of demand will consist of this reinforcement type of plant expansion. It seems certain that in such cases there will be lower increment costs than we are now experiencing. Concerning saturation in consumers, their number has now reached 27 million; from less than 11 million in 1920, there was a growth to 24½ million in 1930. With a somewhat similar ratio, distribution lines have been extended into the sparsely settled regions, and in most areas such lines are now meeting others coming from the opposite direction. So that, except in the remote farm regions, there will be in the future more cases of reinforcing within a district than there will be of extension into new territory in search of new business. While such conditions will not hold for certain farm areas where further large relative increases of new consumers are likely to be obtained, the totals are not likely to be of great significance as affecting national averages. Last year, the number of farm customers increased 19 per cent; their consumption increased 11.7 per cent; and the revenue from such service increased 14.6 per cent. While all of this showed the value of the service to them, the totals at the end of the year in all three categories were only fractionally larger in magnitude than was the amount of growth during the year of our straight residential business alone. All the above, it seems to me, points to a frequently discussed condition that in recent years the industry has taken on any marginal business which previously existed but which has been of doubtful value due to the increased costs entailed in supplying it. Since there was a diminishing amount of new business of the more profitable type, this has been reflected in increasing costs of distribution. It is optimistic, perhaps, to assume that in the next period of increased demands for our service, the present increment cost of distribution will be reduced; but if this present increment is a result of the condition which we have been considering, as I believe it is, then we should expect lower increments to prevail in any future period in which the industry experiences a sustained growth in demand.

In addition to the items discussed, there are certain miscellaneous plant investments which approximate 10 per cent of the total that include real estate, offices, storehouses, and miscellaneous equipment, which probably will not show as large an increase during a period of expansion of load as they have up to date during the period of expansion in area of systems.

This review has dealt with activities of such large magnitude that conditions can be described in only the most general terms. The conclusions being based on national averages, are certain to be faulty in either one extreme or the other for almost every individual case. The data quoted were fragments from that compiled by the Statistical Department of the Institute, and its principal purpose here is to serve as guide posts for companies to estimate their individual futures.

As a national industry, we seem to be fully prepared to participate in the ex-

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Customers and Service

By W. H. Harrison

Vice-President, American Telephone and Telegraph Company

An Address before the Third General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1938

MR. KELLOGG'S invitation to present this discussion was most welcome and I am glad of the opportunity to meet with you and to talk on this fascinating subject. In these perplexing times it is satisfying to talk about service, because it is the one phase of the management job that pays returns substantially in proportion to the effort expended. The appreciation and rewards from service activities sustain enthusiasm—nourish idealism—provide stimulation.

It is this stimulation which makes me brash enough to be eager to present a discussion of service before you men who have demonstrated such high service ideals and have achieved such distinction toward service perfection. I say this with assurance for it has been my good fortune in connection with the work of the American Institute of Electrical Engineers to see something of your activities—to observe the spirit of progress—of service—of enthusiasm for the job you have to do and the eagerness to find better ways of doing it.

I presume the day-to-day customer relationships — right-of-way — construction, installation, maintenance—repair, arrangement for new or changes in service, billing and collections, etc.—in the light and power field present many of the considerations with which we in the communications field must deal.

With this similarity it is not far afield to tell you something of our approach to the service situation. If I seem much too much Bell System it is for the reason that in a discussion like this brevity transcends modesty.

Translated into operations the service philosophy of the Bell System is directed toward making it possible for anybody anywhere to pick up a telephone and to talk to anyone else anywhere else clearly, quickly and at reasonable cost.

Broadly speaking, service, good or bad, is the product of instrumentalities and of the organized effort and will of the personnel. One must complement the other. This is desirable in any business, but is essential in ours where each transaction is a personal one.

Of course, good communication service would be impossible without adequate

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instrumentalities, and notwithstanding the really fantastic advances in ease of conversation, clarity of transmission, greater reliability, freedom of interruption, flexibility for ready expansion, the conquest of distance, all the result of intensive and continuing search for new and improved instrumentalities, it is not my purpose to discuss the influence of these on present-day service.

I do want to say, however, that never has there been a period so productive as the present of better facilities, directly involving the customer. With distance no longer a challenge—with world-wide telephony a reality—full emphasis is toward perfection in established fields. For example, present-day voice transmission systems reproduce the voice so faithfully that difficulty in understanding arises in only about two to three calls in 1,000. Similarly, present-day mechanical switching systems, with a myriad of separate connections, are capable of completing millions of calls per day with a fraction of one per cent, affected by faults in the equipment. New transmission systems permit many conversations to be held over a single pair of wires—the latest of these employing two wires, each surrounded by a tubular shield no larger than your little finger, holds promise of transmitting a frequency band of two or three million cycles, thus providing several hundred circuits each of high quality for the transmission of speech, or two circuits covering the entire range for television.

But all of this is an intriguing story by itself and is one that could well be related to the creation and perfection of instrumentalities in other industries, and especially so in the light and power field.

In this age of scientific achievement, the art of management technique—of management's power to inspire—to develop and assign responsibilities—to analyze and appraise results and causes—to interpret aims and policies—to bring out the best in men and women, frequently is not recognized as having the force it does have in rendering adequate service.

In fact the greatest asset in our present-day service is the years of patient constructive effort that have made service ideals—traditions—part of the habit of thinking of the entire organization. Manifestation of this tradition is found in every activity—it underlies every consideration of the business. You men need no reminder of the tremendous force of this.

This management technique and responsibility involve the coordination of a wide range of activities reaching all the way from specific operating practices to the attitude of mind of the people doing the work. It takes form in methods—procedures—in knowledge of the essential facts as to performance—appraisal of results from the user's standpoint—training and continuing development of the personnel in every level of the organization—satisfactory and considerate conditions of employment—sound employee relations. It is this broad aspect of service that I think will be of most interest.

Methods and procedures grow out of study and experience as to the most effective way of carrying out the business. They require continuous scrutiny and review. Customer habits—requirements — demands — change constantly, and management must be alert to anticipate these ever changing and increasingly exacting conditions under which service must be given.

Service betterments flow as frequently from advances in methods as they do from advances in instrumentalities. For

example, one of the most impressive and attractive features from the customers' standpoint within the past decade grew out of the development of the operating method whereby a long-distance call is handled while the customer remains at the telephone. Before the introduction of this method the average time required to handle a call was 6 to 7 minutes, whereas the average is now 1.5 minutes.

With service the function of so many interrelated activities it is hazardous to suggest that any aspect is most important—but in our business there is general agreement that without full and continuing knowledge of the essential facts regarding just what the customer receives—experiences in using the service—management would be without its most useful tool.

Over the years—step by step—within the Bell System there have been developed tools which make available to supervision on a current and programmed basis significant and dependable facts as to just what standards of service are maintained. These tools take form in periodic results data procured on a sampling basis, and for the most part by specially selected employees not engaged in the work under scrutiny.

The sampling procedures cover all day-to-day operations. They are designed to include substantially every type of contact between the customer and the Company.

The information, in a form available for ready use and on a current basis, is furnished to the supervisory forces for such action as may be necessary or desirable. No supervisor is without pertinent facts as to the work under his or her direction.

Let me illustrate:

A customer makes a request for new service—for change in service. Management should know:

1. Is all the essential information—name—street address—etc., correctly recorded?
2. Does the customer understand charges—initial and recurring?
3. Does customer understand full uses of service?
4. Does customer have adequate services?
5. When is completion of work desired?
6. Was work done when and as requested and in manner desired?

Another operation will further illustrate:

A customer wishes to make a call from a manual switchboard or from a dial office.

Here are the things that should be known about these calls:

1. What was the time interval in seconds required to establish the connection?
2. Was any difficulty experienced?
3. What were the transmission characteristics?
4. Was the manner of the employee involved satisfactory?
5. How many calls failed of completion because the called party's line was busy—no answer—slow answer—faulty operation—or for other reasons?

Another type of operation:

A customer makes some inquiry as to his bill:

1. Was the information furnished correct in every detail?
2. Was the manner of the employee satisfactory?
3. Was the customer fully satisfied with the explanation?
4. If the inquiry could not be immediately answered, was the information given within the promised time?
5. Was there any unnecessary delay in the handling of the inquiry?

The separate operations under scrutiny and the specific data recorded are far too numerous to outline here. I think though that the above illustrations give you some idea of the general plan.

When it is considered that there are 85,000,000 telephone calls made each day, 400,000 contacts in our business offices each day and 90,000 visits to a customer's home or office for installations or repair work, faulty or imperfect handling of even a fraction of one per cent of these contacts holds potentialities of customer irritation or ill-will in hundreds of thousands of situations each day. The volume alone justifies most careful scrutiny of these service transactions.

The broad pattern of all of these results data is such as to make possible intensive and healthy competition between separate units of the System, thus providing one of the greatest of stimulants for progressive improvement—spirit of competition. Much of the data is reduced to a common denominator to make comparisons equitable, and particularly to make trends significant. This procedure has the further value of bringing to bear the combined experience of all units of the System in the search for better results.

Of course, the value of this whole approach is not simply in setting up results data. It is in the ability of supervision to translate the indications into effective action. Management procedures—born of System-wide experience—training—leadership—idealism—accomplish this. It has been our experience that training in the fundamentals and technique of management is as essential as is the training of the craftsman. Instruction courses following the case method of procedure are a current part of the training in the various levels of supervision.

For the most part I have been referring to transactions readily susceptible of measurement—in short, to the technical phase of service. But good technical service is not enough. Service must be pleasing—the customer must be made to feel that there is personal attention for him. This important requirement is difficult to define. It is found in the tone of voice—in expression in the eye—in manner of speech—cordiality of mind—in short, it is that something way down deep in people which moves them instinctively to do graciously those things they are called upon to do—it is what we sometimes speak of as the tone of service—the frosting on the cake—the desire to please—service from the customer's viewpoint—it is the "voice with a smile."

All of this is especially important when a customer experiences difficulty or in unusual circumstances. It manifests its presence in every conceivable fashion—and frequently takes the form of running counter to established practices to care for an immediate situation.

Results here—good or mediocre—are about in proportion to the employee's interest in the job—and this reflects the ability of supervision to inspire—enthuse—create and sustain team play—maintain idealism. It has as its foundation satisfactory conditions of employment—considerate treatment—continued sympathetic understanding and mutual respect between employees and management. I happen to think that in any business these days there is no more important management responsibility than this. Certainly it is fundamental to good service. Dare not more than touch on this for I am afraid I would go well beyond reasonable time limits.

Mindful that I have covered this general subject in the most elementary and sketchy fashion, I have avoided details. If any are interested I shall be only too happy to go into specific matters.

In closing I want to take just a moment to express to you the appreciation of the Bell Companies for the splendid spirit of cooperation shown by the member companies of the Edison Institute in our related day-to-day operating problems. Particularly do I want to express our gratitude for what was done in furnishing power and other services in the emergencies of the storms and floods of the past few winters. I know of this from personal experience in Pennsylvania and Delaware and take this opportunity to here express thanks.

Sales Mean Jobs

By H. W. Burritt

Vice-President, Nash-Kelvinator Corporation, Detroit, Michigan

An Address before the Third General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 8, 1938

WE all know that every appliance which your great industry has pioneered—electric irons, vacuum cleaners, washing machines, electric refrigerators and all the rest—has built its success on the principle of personal salesmanship—of going out from behind the counter and into the home—and asking people to buy and in the process the daily lives of millions have been changed for the better and a real service rendered to the people of America.

We knew that in 1938 fewer people were canvassing—ringing door bells—going into the homes of America with courage and enthusiasm.

"Over saturation"—"No buying power"—"Too many calls before you can find a prospect." These were among the wails of many retail salesmen. Then he yearned for what he called "The good old days when 10 calls would produce a sale." And in some instances his yearnings touched the heart of his employer and home-selling was abandoned or curtailed as an unprofitable operation.

Several months ago our Sales Promotion Department was planning our June-July Campaign. This Campaign was designed to correct this situation of which I have spoken. It was a simple sort of a plan. It just involved hard work—going back to fundamentals—and being systematic about it.

Then when everything had been put together, this plan—of which the National Salesmen's Crusade is the unrecognizable outgrowth—was taken to our president—George W. Mason.

He injected an entirely new idea. He made us see that, if our original premises were sound, our program was much too limited in its scope and objectives.

Then our thinking was directed along these lines:

First: Unemployment is a major national problem.

Second: Though undoubtedly impaired, the ability to buy is still to be found among our citizens. Though millions are unemployed, many other millions are at work.

Third: A definite step toward the reemployment of the unemployed is the sale in increased quantities of our farm and factory products to those who *are* at work. This will create employment and—with the restoration to buying power of those now living on a subsistence scale—we can expect a constantly accelerated demand for and consumption of these products.

MR. BURRITT

Again salesmanship will have justified itself as a true creator of wealth. Then man who sells—*anything*—is a part of our system of distribution, and so creates wealth in as great a degree as the miner who digs out basic materials, the artisan who fabricates them, or the railway man who moves the finished product to its destination.

Fourth: The American Salesman faces a remarkable opportunity to be of help in the solving of the unemployment problem. Originally the family was a self sufficient unit. The head of the family grew the food, made the shoes and whittled out his own ax handles. A little later one man grew more proficient in the making of shoes. And he liked to make shoes. So he became a salesman, went to one of his neighbors and sold his shoes for the ax handles which the neighbor made. With the beginning of specialization modern industry was born. By his salesmanship, the cobbler kept himself at work at a job which he liked and for which he was best fitted. He got better ax handles and his neighbor got better shoes.

Since that day, long ago, the salesman has occupied a position of constantly increasing importance in our national life.

Today the national need for his services is greater than ever before.

It is his task to strengthen old and create new desires for farm and factory products to a point where the desires outweigh the fears which have kept people from satisfying their normal needs.

The fifth point is—that the business of any manufacturer or any industry will be helped by the success of other manufacturers or other industries.

These five basic truths are responsible for the National Salesmen's Crusade. And all five can be boiled down to the simple phrase, "Sales Mean Jobs."

When people have jobs they buy things. So we can add the statement, "Jobs Mean Sales," and the circle, making for reemployment, is complete.

So we threw away our sales promotion plan in favor of the broader idea to be shared with anyone who shared our beliefs.

But first of all we needed proof that these truths about hard work and fundamentals were as workable as ever. We chose Lincoln, Nebraska, as a typical American city and because of its geographical location for our proving ground.

On the morning of May 11, two of our own men and two men from our advertising agency slipped into Lincoln without advance notice. Their plan was a very simple one, but they realized that the idea of working hard isn't particularly inspiring, so their program for making hard work interesting and attractive had to be thorough and complete.

Since the new idea embraced *all* business, the program scheduled a call on H. J. Krusz, the general manager of the Chamber of Commerce as the first step.

He was quick to see the implications of the plan, but some questions had to be answered: "Did we mean *all* the business men in Lincoln were to be taken in?" "Yes, we meant just that." "Even our competing dealers?" "Certainly!" And *that* sale was made.

He immediately called a session of his Board of Directors. And from that moment the Lincoln Chamber of Commerce has been lending every aid to the National Salesmen's Crusade and to its members in making the best use of their opportunities!

Mayor Copeland next. He thought

the Crusade would help business. He was ready to help.

Governor Cochran. An audience scheduled for 10 minutes grew into an hour as he discussed the far-reaching possibilities of the idea.

Mr. Gildersleeve of the Iowa-Nebraska Light and Power Co. They handle General Electric refrigerators. Loyal supporters of the Crusade from the moment they heard the story. (Why they ran a big advertising program in its support! And so did Sears-Roebuck for that matter! And department stores and dealers handling other competing products were as strong for the Crusade as were we.)

The newspapers. Possibly just a bit skeptical at first, but ready to go along if they didn't find the whole thing a stunt. And when they found that everything was as it had been painted, their support was enthusiastic.

Sunday, May 15. The first hint of the launching of the National Salesmen's Crusade appeared in the Lincoln newspapers. No attempt to disguise the fact that folks were going to be asked to buy a lot of different things by a lot of people. The announcement appeared on page 2.

Monday, May 16. Stores asking questions. Newspaper stories on the editorial page.

Tuesday, May 17. A great mass meeting of 1,800 dealers and retail salesmen called by the Chamber of Commerce. Window cards for every store saying, "National Salesmen's Crusade. Sales mean jobs. We are cooperating." And 5,000 buttons, miniatures of same insignia.

The retail salespeople—the dealers—heard that all there was to the plan was that they were to work harder—and that that would make jobs for people now unemployed. Salesmen working on a specialty basis were to pledge themselves to make at least ten calls a day. People behind the counter were to pledge themselves to an attempt to make more sales. The butcher, the baker, the candlestick maker were all asked to put on extra sales steam, each using the methods best fitted to his own business. And that crowd actually cheered the idea of working harder!

The Mayor asked that the city flags be displayed the next day to mark the opening of the Crusade.

Wednesday, May 18—Early morning sales meetings in all the larger stores. Newspaper stories on the first page now! Our party arrived to find a city gay with flags. Crusade cards in every window.

Crusade buttons everywhere. On salespeople in the stores—on newsboys—popcorn vendors—and on "brass-hattish" looking men who might be bosses just coming to work.

Our distributor in Lincoln held a breakfast. His dealer organizations, Chamber of Commerce officials, utility representatives, the mayor of Lincoln, the Governor of Nebraska—and our distributor's competitors were there. Naturally he couldn't ask everybody that should hear the story, so Lincoln radio stations broadcast the proceedings, that all Nebraska business might listen in. And they did it of their own accord as a sustaining feature.

At this breakfast the National Salesmen's Crusade was explained. Governor Cochran gave a ringing keynote address. Dealers and salesmen signed their pledges and the Crusade was under way. Out-of-town dealers hurried home and Lincoln salesmen went to work. With them went George Mason and all his sales executives.

Mr. Mason had demanded 10 prospect cards and started out to ring doorbells. As he left the breakfast room, sales kit under his arm and prospect cards in his hand, a visiting newspaper man advanced a skeptical suggestion. He suggested that the cards might possibly be of just a little better than run of mine quality—the "cream of the crop," in fact.

Mr. Mason accepted the challenge, tore up the prospect cards and started out on a cold canvass. He made 14 calls at homes picked by the newspaper man, had the door slammed in his face at one house, found three good prospects, and got one definite promise to buy within three days. On the third day we received a wire saying that the promise had been kept.

Our crowd was not the only one at work. One woman said that her doorbell had been rung six times in two hours. And smiled as she said it.

That was the most amazing thing of all to us. The attitude of the public. They had got their first inkling of the Crusade just three days before—and they looked pleasant every time they saw a Crusader's button—no matter who wore it. The idea had swept across the city like a prairie fire.

One woman phoned that she had heard a broadcast about the Crusade and felt it her duty to buy something. Would the department store send out a salesman? They did and she bought a refrigerator.

A newsboy, the Governor's son by the way, canvassed his route and got eight new subscribers.

Our competitors' sales, we are told, were up 50 per cent during the first week. Sears tractor sales spurted and the Lincoln manager wired his home office suggesting a national tie-in.

One of our executives asked a policeman where he could sell a refrigerator. The officer gave the name of a fireman at a nearby station. No, he wasn't in the market, but he would be glad to round up all the other members of the company to listen to a sales talk.

A woman who bought on Thursday brought a neighbor down on Friday and stood by until another sale had been made.

A motor car dealer increased his sales 300 per cent over the week before.

A department store reported that the first 433 calls yielded 98 prospects and 42 sales. One sale to every 10 3/10 calls.

Our own organization is selling one refrigerator, range or washing machine to every 10 and a fraction calls.

The general manager of the Chamber of Commerce writes—I read extracts—"We are especially appreciative of the broad plane upon which this campaign has been staged . . . every line of business in Lincoln has cooperated because they feel the idea has so much merit . . . bigger than any one industry . . . an idea upon which all lines of industry including your competitive lines can cooperate . . . business in Lincoln this week has been much better . . . I firmly believe that the business of the nation is hungry for this constructive idea . . . you will find a most hearty reception from Chambers of Commerce . . . I am sure you found a friendly reception at every home . . . I know that men in other lines of business found this true during the week which is indicative of what can be accomplished for salesmen when an entire community pulls together in a constructive effort."

This was the start of the National Salesmen's Crusade. Reporters sent to Lincoln by their papers to see what was happening, news services, picture services, radio commentators, the trade press of a score of industries have featured the story, and, instead of dropping it after a first report, they keep on demanding more and more information.

(*Continued on page* 300)

The Challenge to American Business Leadership

By Dr. Virgil Jordan

President, National Industrial Conference Board, New York, N. Y.

An Address before the Fourth General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 9, 1938

THE underlying conditions in this country and in most of the world are very unhealthy and unstable. We find ourselves again, or still, in severe depression, the deepest and most prolonged in our history. The difficulties in the way of making sound recovery and resuming stable progress under our business and political system are more serious than we have ever faced in our generation, and more serious than most people in this country are yet able to understand.

It would be pleasanter if we could forget the failures of the past, ignore the errors of the present, and face forward with confidence and hope to the opportunities of the future. But if we are candid with ourselves we cannot do that. In the quarter century that lies behind us this country and most of the world has been involved in a progressive process of economic, political, and social deterioration. Despite superficial and temporary changes in business and political conditions, this process will continue toward its inevitable end until enough people with intelligence, integrity, and courage decide for themselves what is worth trying to save in our civilization and resolutely set about saving it at whatever personal sacrifice may be necessary.

The present situation in this country which is essentially the same as that in most of the rest of the world, is the product of vast and powerful political, economic, and social forces that have been set in motion here and in most other countries during the past twenty-five years, as the result of the World War and of the policies that have been persistently pursued by governments and business ever since. The Great War was the most destructive catastrophe that modern civilization has ever suffered and for almost a whole generation the world has been trying to postpone or escape paying the inevitable cost of that calamity.

The wastage, destruction, and disorganization it involved have affected every aspect of our economic, political, and social life. It not only destroyed almost a whole generation of men that

DR. JORDAN

constituted the living link of our civilization with the past. It not only entailed an immeasurable wastage and dislocation of economic resources and wealth throughout the world. It not only brought lasting disruption of international intercourse, engendered violent racial and class conflicts and wrecked established political institutions in almost every nation.

It involved above all a pervasive moral and social deterioration which has had profound and far-reaching effects on the economic and political situation in every country. It persuaded great masses of people, including business men and political leaders, to believe that it is possible to get something for nothing, and to get it by force of arms or the power of the State. Since the war, the people of every country have accepted and persistently tried to apply the principle that the price of the War could be paid and economic prosperity and progress could be attained without cost in labor, self-sacrifice, and thrift but through political power, military force, governmental edict or financial magic.

The political and social struggles as well as the economic difficulties we have experienced since have been the consequence of these facts.

They have reflected themselves in an immense inflation in the power of the State and corresponding depreciation, to the point of repudiation, of the creative value of the individual human personality. Unity of productive effort necessary to compensate for the wastes of war has been prevented or disrupted by reckless stimulation of group, class and international conflict. Chronic and deep-seated distrust among management, labor and government has replaced the normal unconscious cooperation of productive interests. Application of personal industry, initiative, enterprise and ingenuity to increase productive power has been discouraged and crippled. The political means of advancing personal and group prosperity and power has been substituted for the economic means. Use of the public credit and the people's savings to establish, consolidate and increase the political power of groups has become an accepted principle of government. The working capacities of the people have been demoralized by government dependency, and their accumulated savings have been dissipated by taxation and by governmental aid spending which has syphoned off and destroyed a large part of the productive capital of every nation. The foundations of a comprehensive structure of State capitalism designed to replace the enterprise system have been laid in every country, and amid the ruins of the enterprise organization ambitious demagogues or dictators struggle to secure or maintain control of the political mechanisms which are deliberately designed to dominate or dictate the economic and cultural life of the people.

This process has been accompanied in every country by a pervasive and chronic distortion of the whole economic system through progressive inflation of credit and debasement of currencies. Inflation is the essential and natural instrument for expanding the power of the State. All wars are fought and political despotisms are established and maintained by manufacturing fake money, destroying real wealth, and wasting human labor, as well as by abolishing human liberty. In consequence of the Great War and the policies that have followed it, inflation has become the

chronic and malignant disease of the world's economic organism just as the superstition of the State has become the pervasive delusion of political and social life. It created and has since persistently maintained artificial levels of prices and wages which have destroyed the natural balance of the productive system in every country as well as internationally and retarded progress in the real standard of life of the people.

No, we should not delude ourselves in imagining that western civilization has not escaped or postponed paying the price of the Great War.

The plain truth is that the war bankrupted the world morally and financially and it has been going through a process of spasmodic receivership ever since as one nation after another has submitted itself to some form of dictatorship. This process is not yet completed even twenty years after and what we are witnessing today in this country and in Europe is its culmination.

It is conceivable that through the normal operation of economic forces under a free enterprise system, a country so rich in resources and so strong in industrial capacity as our own could have worked off the terrific cost of the war and finally buried its debts and delusions along with its dead. It is conceivable also that under wise and patient leadership the American people could by now have liquidated their post-war financial follies and begun to build a new era of stable progress on a sound foundation. All this was possible for us, even if it was not for some of the other war ravaged countries of Europe. But we could not hope to do this under the added burden of the false and destructive economic policies and political misconceptions to which the country has been subjected during the past five years. Not only has our financial and fiscal organization been inflated to the point of virtual insolvency as a result of them, but what is far more fatal, our productive organization has been disrupted and demoralized, and the whole force of the private enterprise system has been paralyzed by the academic incompetence, political confusion and malicious persecution of government. At best we needed the utmost effort of our productive organization to compensate for the wastes of the war and the follies of the following years; but it has been crippled and weakened to the point of prostration by the most merciless, malicious and deliberate bureaucratic blood-letting that any business system in a free country has ever suffered.

Hardly anyone is bold or sanguine enough to imagine that the vast machinery of State control which now dominates and feeds upon every aspect of economic activity will or can ever be liquidated and the functions of the federal government deflated to the level at which the social energies of the people can once more be fully released to work out their own welfare and destiny. Fear of an uncertain and terrifying future, and a frantic search for a position of passive and dependent security somewhere in the protective bosom of the government has deeply penetrated the spirit of the American people once so adventurous and creative. The foundations of our national prosperity have been deeply eroded and undermined.

In this picture of economic and political deterioration during the past twenty-five years, where has American business leadership stood? If we are to be realistic about the situation in America today there is only one honest answer we can make to this question. We must candidly admit that in the dangers and difficulties of this disastrous period American business management as a whole has so far found itself unable to fulfill the full measure of its responsibility to the American people. To be sure, it has fought its feeble rearguard actions, and it has had its heroes, who like Horatio have bared their breasts to the spears of State persecution. But it has not risen to the great opportunity and privilege of constructive leadership which the American people have given it by virtue of its vast accomplishments in the past. In their anxiety, confusion and distress it has persuaded them by its example and compelled them by its own confusion of thought, by its own vacillation and disunity of action, to resort to the political means of prosperity and security, to embrace the delusive promises of government, to surrender themselves to the destructive superstition of the State; and thereby it has betrayed their deepest desires and their ultimate interests.

It is hard for me to say this because it is bound to be misunderstood and misinterpreted. I have spent most of my life, and its best years, working with and for American business. I think I have as deep an understanding of its problems and its unparalleled accomplishments as anyone. I have a profound and almost fanatical conviction of its immeasurable importance for the future prosperity of the American people. I believe that they will never attain the security they seek or the progress they hope for without it, and I have firm faith in its capacity to discharge its responsibility to them, if it understands what is at stake—not for it—but for them.

I do not imply that American business management has failed for lack of good will, or through deliberate dereliction, or callous indifference. We need not worry about the vindictive demagogues and the envious academagogues who have spread much slander among the American people. What has happened is a tragic misfortune for which no one group or individual is to be blamed. I mean only that by temperament, training, experience and knowledge American business management was not adequately prepared for the unprecedented and tremendous task which was imposed upon it by the vast economic, political and social changes during the past twenty-five years since the war. These changes were foreseen by few, if any; and business management had been preoccupied for a century with pushing forward the rapid expansion of our productive power which was without parallel in the history of the world. The intense expression of individual energy which was the basis of that expansion did not provide time or opportunity or temperament for the generation of business men who inherited the responsibility of management after the war to prepare themselves to deal with the great questions of national policy which it presented to them.

Here, as everywhere in the rest of the world, the responsibility necessarily passed to the hands of government during the war; and business has let it remain there more or less ever since. Business management felt that its supreme or sole concern was the security and success of each individual enterprise. It was only vaguely interested in the far-reaching economic, political, and social forces turned loose by the war which were re-shaping the destiny of nations, and the fortunes of whole industries and whole sections of our country. A generation of business executives whose business careers coincided with the long period of rising prices since the beginning of the century found security and success fairly easy so long as this rise continued and the new price level created by the war was sustained. They were quite willing to endorse the principle of high wages if they could continue to operate on this new plateau of prices,

maintained by chronic inflation and protected against foreign and domestic competition. They complained when labor moved victorious to the same dream world and fell into the same delusions; but so long as labor organizations didn't get rough about it, and prices were kept up, everything was all right.

Those in business management who have inherited this Pandora's box of political, economic, and social troubles that plague us today have never had the opportunity or felt the need to acquire a thorough understanding of the fundamentals of economic program and of economic history. If they ever thought about the essential nature of the enterprise system of which they were a part, they sadly misunderstood it. Like the politicians of today who have usurped their role of leadership, they thought of the American enterprise system as a one-way profit system. They had little liking for the brutal principle of risk and adventure on the basis of which their forefathers had developed a powerful and prosperous nation by winning and losing fortunes and building and destroying vast financial and industrial empires over night. They had come to believe that balance sheet profits are the normal and natural accompaniments of the enterprise system, and that it was the essential function of government to assure a profit for every business venture. They could not grasp the truth that under every economic system, and certainly under the enterprise system, the profits of successful enterprise are offset by the losses of the unsuccessful; that real economic progress and elevation of the national standard of living depends upon the competitive struggle which inescapably balances profits against losses and makes the net gain of productive enterprise accrue ultimately to the consumer. They did not realize that business as a whole could be profitable only during periods of rising prices resulting from credit expansion which injected new money purchasing power into the economic system, and which was inevitably offset by corresponding contraction and deflation that brought general business losses during succeeding periods of depression.

These fundamental facts about the nature of the enterprise system are so little recognized even today that American business management is chronically uncomfortable and unhappy unless the government is doing something to protect and maintain the price level by controlling domestic or foreign competition or by inflating the currency or expanding the credit of the country through its monetary and fiscal policies. American business management does not yet clearly comprehend the basic principles of national prosperity and the inescapable conditions under which a free enterprise system must operate; or if it does understand them it is not willing to face them.

In consequence it finds itself confused, divided in counsel, vulnerable to attack, and powerless to command the support and confidence which real leadership requires. It complains of taxes and public indebtedness while it longs for the benefits of inflationary public spending. It wants to maintain the price level of its products, while it resents the efforts of labor and agriculture to do likewise. It complains of the intrusion of government into private enterprise and into the capital market, while it is reluctant to take the risks of enterprise itself. It would like the enterprise system to be arranged as a game in which it is always assured of winning, while everyone else should take his chances, even those who are in the worst position to do so.

These are hard words for anyone to say who is such a profound believer in the enterprise system as I am; but sooner or later we must face the facts which they express. We can attain true prosperity in this country only through the unqualified application of the enterprise principle. It admits of no compromise, exception or special privilege. Everyone who claims its benefits must accept its risks and responsibilities. If we demand for ourselves any exception to its rigorous principles in order to diminish the risks or soften the impacts of the competitive struggle, we must be prepared to consider the similar claims of others. More than that, because of the high responsibility of leadership which American business management holds, we must be prepared to consider the claims of the weaker groups of our people for protection and security before we try to enforce our own. This challenge has become inescapable in a period when, as a result of the great upheaval and destruction of the war, the search for security has become universal and urgent. If the enterprise system is to survive at all in the face of this vast and desperate demand, if business management is to maintain its high privilege of mobilizing and utilizing the savings and labor energies of the people in the interest of their prosperity and progress, if it is to find security for itself, it must willingly and courageously assume the risks and accept the responsibilities of providing for the security of others. To do this without diminishing the national prosperity and sacrificing progress in the standard of living requires unity of understanding, breadth of knowledge and information, and courage of action far greater than American business leadership has so far been able to command. That is the real reason why initiative and leadership has passed into the hands of the State.

These are the conditions and this is the challenge that face American business management today, and they will require of us an immensely greater effort of realistic thought, courageous action, and patient cooperation than has ever been demanded of us in the past. In attempting it we should remember that we have a few powerful forces on our side, and I turn from this discouraging review of the obstacles and handicaps that face us to a brief mention of the factors that favor our effort if we are willing to make it.

In the first place, we should remember that America remains today practically the only spot on this unhappy planet where we retain in some measure freedom of action to determine our own destiny. We are immensely rich in natural resources and not seriously dependent upon other countries for our own prosperity. We do not live under the menacing shadow of imminent invasion which requires rigid regimentation of our energies for self-defense and survival. That calamity might overtake us or be forced upon us if we were to be pulled or pushed into another international conflict; but the prospects of such conflict are not immediate. and if we are wise and vigilant we shall so far regain control of our affairs as to prevent our being thrown into war if and when it comes. by the internal and foreign enemies of the enterprise system, who know that it is certain to be destroyed in another world war and would be willing to take that risk as a last resort to gain power.

It is an almost unique and immeasurable asset that our political institutions in America remain still relatively free and flexible, despite the vast expansion and usurpation of power by the State into which we have been stampeded during the past five years. Though we are immensely more harassed and burdened by the incubus of bureaucratic government than ever before, it should be a source of great satisfaction and some assurance that we have stubbornly fought off during these years the deliberate and

bold effort of the enemies of these institutions to destroy our ultimate constitutional defense against the centralization of absolute power over the lives of our people in the hands of arbitrary executive authority. Though the struggle by no means is over, we should be encouraged by the thought that we won that first decisive battle.

Secondly, the very fact that the bold attempt at usurpation of power over the Courts and Congress was beaten off by a spontaneous uprising is an indication that a slow turn in the undercurrents of public feeling is taking place. The American people have become more sensitive and watchful toward the insidious stratagems and devious devices of government, more conscious of the burdens which its wastes and extravagances impose upon them. The collapse of recovery, the paralysis of progress even in comparison with the poorer countries of Europe during the past five years is making millions of Americans dimly aware or acutely conscious by direct experience of the fallacies, failures, and deficiencies of the New Deal philosophy, and increasingly skeptical about the competence and sincerity—even the ordinary honesty of its exponents and administrators. They have begun to realize that recovery and progress under the enterprise system is impossible so long as a deadlock of hostility, distrust and malice prevails between business, labor and government, and that unity and co-ordination of effort among management, labor, and political administration is indispensable if we are to preserve both liberty and security. This is the unseen and intangible change of the tide that always comes when the inescapable facts of experience emerge from the confused tangle of ideas and words so long as the opportunity remains for open public discussion in a free country.

Finally, we must remember that no government and no group of political personalities, however powerful or persuasive, can produce a complete revolution in the fundamental temperament and outlook of a people in a short period of time. This is especially true of a people so diverse in character, so imbued with individual ambition, so strong in the tradition of opportunity and so hopeful of the future as the people of America. Though we have drawn them from all the world, the great mass of humanity whom we have gathered here in this richest area of the world are predominantly the most energetic, adventurous, and imaginative, accustomed to take for granted the highest standard of living the world affords, each irrepressibly ambitious to advance himself in prosperity and position and to extract from the opportunity of a free and flexible social, political, and economic system everything that he can by his intelligence, industry, and initiative. When we contemplate this vast assembly of hopeful human energies which compose the American people, and compare it with the masses of many countries of Europe who have been driven by desperation and despair to submit themselves to exploitation and enslavement for the sake of sheer subsistence and security, we should sink our doubts of the destiny of America in a renewed realization of the high privilege and responsibility of constructive leadership which the unique opportunities of American progress offer to American business management.

Favorable and reassuring as these fundamental facts are, they should not blind us to the difficulties to be overcome, and the immense effort of thought and action to which both the opportunities and the difficulties challenge us. We must not mistake the next temporary inflationary lift in the business movement to mean that we are over the rocks and on our way to real recovery. We must not imagine that some mysterious providence will automatically solve the problems which the war and post-war period left us, or that some miraculous personality will appear out of the political machine to spare business management the painful necessity of assuming the responsibility of constructive leadership in this crisis.

Above all, we must not assume that their growing disillusionment and disappointment at its delusive promises will make the American people respond with confidence to mere negative criticism and indictment of the New Deal and its leaders. Amid the colossal wreckage of their hopes which it has left, the American people will expect something more from business management than the uninspiring spectacle of seeing it sit around grumbling about its burdens, making heroic speeches to itself, writing resounding resolutions for others to follow, or crowing and saying that we told you so.

Whether we like it or not, modern business has become something more than a private personal concern of a small group of people who are engaged in managing it, something more than an incidental part of society. Today it is inevitably the essential basis of the life of the whole people, the only way they can live at all, and certainly the only means by which they can ever hope to have the prosperity and security which they are accustomed to believe they can attain through it, and which no government can ever give them.

They have granted business leadership a great franchise of freedom in the past because they have put their faith in it and expect so much of it for their future. They will not in despair resign themselves finally to other means of seeking what they want so long as they see any chance of getting it through private enterprise. But they hope and have a right to expect from business leadership at least some sign or portent—some gesture dramatic enough to justify them in their faith, give them hope for the future, reassure them that those to whom they have entrusted the responsibility for this essential element of their lives are vigilant and on the job of protecting their ultimate interests.

They will demand swift, positive, concrete action to break the deadlock between government and business. They will expect business to move in and take over the job at which government has failed, or they will try another government to do it. The next two years will be the decisive test of business capacity for leadership.

Only clear, realistic recognition of the dangers that we face will inspire the business community to energetic, intelligent, cooperative creative action. This is the one country in the world today in which there is still a chance for business to preserve and strengthen the enterprise system, and thereby save the free, representative political institutions and the civil liberties which are inseparable from it. Though temporarily submerged and discredited, the business man is still the dominant symbol of creative accomplishments in America—at least the only one that can serve as a focus of effective action for some time to come. Business still has the opportunity of leadership among the American people, but this opportunity is slipping away rapidly, and must be grasped promptly, for this depression is the eleventh hour of the enterprise organization and democratic institutions in America. It is certain to create the unmistakable impression on great masses of our people that, even with the immense powers that have been given to it, government has not succeeded in ensuring stable prosperity and progress within the framework of the existing economic and political system. If no effective effort is made to achieve this result under other leadership, the

certain conclusion that will be drawn is that we must give up trying to preserve this framework, surrender all authority and responsibility to the State, and go further along the road to dictatorship.

At this moment—and it will be a brief crucial moment—the initiative has lapsed from the hands of government. The ball is on the ground waiting for some one to make a run with it. I urge that business take the ball at this crucial juncture and try some real forward passes, of the kind that government has so badly fumbled, to improve our enterprise system in behalf of the American people, and to inspire them to renewed enthusiasm and confidence toward it.

The task is difficult and full of discouragement, but it seems to me clear, definite, and inescapable. I believe it is the only strategy by which it may be possible to save the enterprise order in America.

At this crucial moment American business should file its criticisms and complaints for future reference and turn to the active task of reconstruction. It should make no more vague, indefinite, and conditional offers of cooperation with government. It should come forward to the American people with an unconditional pledge and a specific program to re-employ our labor and to rehabilitate our industries, step by step during the next two years, and it should then demand the aid of government in certain specific ways to that end.

It should mobilize itself and proceed to this definite task in the traditional and sound American way, by industrial and local organization along state lines under the inspiration and supervision of a national Reconstruction Council of business leaders in whose capacity management has confidence. In each state the existing business and labor organizations and the state governments should create a State Re-employment Council which should assume three specific responsibilities of action.

First, it should secure from all employers in the state pledges of re-employment during the next two years of a determined numer of employable persons.

Second, it should establish and operate adequate facilities for retraining and rehabilitation of workers not employable because of loss of skill and long unemployment, using in part private resources and in part public work relief funds for this purpose.

Third, it should constitute itself an advisory and supervisory agency to assist in the effective administration of public funds for direct relief and work relief within the state, with coordinated subcommittees in each community.

When these state and local organizations have been established and this mechanism of private action is in operation, then, and then only the National Council should present to Congress and to the public a specific statement of the assistance which is required of the Federal Government for the effective accomplishment of this effort. Such a statement should specify the financial assistance required for retraining and rehabilitation facilities, for transportation and relocation of employable workers, for part payment of wages of people reemployed, for financing of working capital requirements of individual enterprises, as well as modifications in federal taxation and other legislation which are necessary in order to aid business management in discharging the responsibility which it has assumed.

It must go farther than this. It must proceed, in a spirit of patient appeasement and conciliation, to try step by step to build a basis of contact, discussion and cooperation with government and labor wherever there is any chance of getting their assistance in advancing its essential aims and fulfilling its fundamental pledge of re-employment and reconstruction. It must not let itself be discouraged by affronts, failures or the bad faith of others in its efforts. It must remember that it carries the destiny of America in its hands, and that the American people will continue to look to government and will submit themselves to political leadership or dictatorship until business leadership demonstrates by its acts that it is able to meet their needs—not their demands—their real needs, more effectively than anybody else. Until that happens the processes I have described will proceed relentlessly to their inevitable disastrous end.

To carry out this program a gigantic national effort in private cooperation will be necessary. It will require the mobilization of all existing business organizations, all effective agencies of publicity, all resources of information, and all the initiative and public-spirited effort of the business community. All the potential capacity of American business leadership must be brought to bear toward the single national purpose, which is to fulfill a specific and concrete pledge to the American people, independently of government and with only such assistance of government as the manifest sincerity of the pledge will compel. That pledge must be made in utter good faith, and any assistance of government and labor toward its fulfillment must be asked and accepted likewise in good faith.

If this concerted effort were undertaken by American business management in the spirit and along the lines I have indicated, I have some confidence that it would set the American people back on a sound road to permanent recovery, and save them and their institutions from the disaster which lies ahead of them on the road they have been following under the political leadership of the past five years. It will still leave many difficult problems of readjustment to be solved; but if American business management can only give dramatic demonstration of its willingness and capacity to meet the immediate national emergency that faces us, there will be no question of its ability or its freedom to work out those problems, or of the confidence of the American people in their sound solution under its leadership thereafter.

We still have an opportunity in America to eliminate unemployment and provide stable and growing prosperity for all our people the framework of enterprise and civil liberty, but only business can do this, and it can compel government to help if it plays its hand intelligently, courageously and with unity. At this moment the great majority of the American people, with the tragic spectacle of Europe and Asia before their eyes, hesitate desperately before the fatal decision of dictatorship, and if they feel there is half a chance to get what they want without it they will choose the American way. Business should not let this momentous decision be made for them by default.

Modern Kitchen Bureau's Executive Committee Considers Plans

THE Executive Committee of The Modern Kitchen Bureau met at Atlantic City on June 8, in connection with the annual convention of the Edison Electric Institute. George E. Whitwell, Chairman of the Bureau, presided. A full discussion of the program since the first of the year and of plans for the future took place.

Roger Bolin, Chairman of the Plan Committee, reported to the Executive Committee on the fall program which his committee has in preparation.

The New Fluorescent Lamps

THE new fluorescent lamps were described and demonstrated on June 8th before the Convention by Ward Harrison, Director of Engineering of the Incandescent Lamp Department of the General Electric Company.

Mercury vapor is used as the light source. Illuminating engineers have long recognized the mercury vapor lamp such as has been used in photographic studios as more efficient than the filament lamp, Mr. Harrison said, but because of its characteristic blue light it has been undesirable for general illumination.

In the new lamps recently developed this previous difficulty has been overcome by coating the inner side of the tube with fluorescent powder. By using powders of different ingredients it has been possible to produce more efficient white lights as well as colored lights in a variety of beautiful and interesting shades. The shades which have been produced include red, gold, pink, blue and green, as well as white and daylight.

Uses predicted by Mr. Harrison for the new lamps are in the field of decorative lighting, including advertising purposes, for store and industrial lighting, and for home lighting. They are adapted for use in many situations where daylight conditions are desired. Many additional uses are anticipated as the lamps come to the attention of architects, decorators and builders.

In the course of his demonstration Mr. Harrison said in part:

"The fluorescent lamps complement, rather than aggressively compete with the incandescent lamp in every important particular.

"We think that the fluorescent lamps are going to introduce an era of the very extensive use of pleasantly colored and tinted lights. It is very fortunate that the two World's Fairs are coming soon, because it has been our experience that each sets its standard of lighting just as Chicago's World Fair has been reflected in installations all over America of that particular type of lighting. We believe these two Fairs will also be patterns for future installations, and they are using, as you have been told, fluorescent color lighting very extensively.

"We believe, too, that the fluorescent lamps are going to fit in well with the air conditioning program. Today, you may save as much as twenty per cent on the investment in air conditioning equipment if you use fluorescent lighting for adequate illumination, instead of the familiar Mazda lamps; and that twenty per cent may be the determining point of the merchant whether he will buy or postpone buying.

WARD HARRISON

"We believe, also, that these lamps will improve your load factor. The light depends upon the number and type of tubes as well as the hours of use; they can consume a relatively small amount of current, and they can give a large result. We think that the daylight tube utilized in stores will be turned on in the morning and kept burning all day, which is not true in many, many cases of the average lighting installations; and because of the absence of heat it gives us another chance, and your salesman another chance of getting after those millions of show cases which are not quite properly illuminated.

"It will also give you a chance to go back to the customer whose present wiring will not carry any increased lighting load of Mazda lamps, and sell him a good lighting installation. We think, too, that they will put back on the street, because of the high unit of sales involved in dollars, the jobber salesmen and the electrical fixture salesmen selling new lighting installations.

"Some will buy fluorescent lights, others, who do not feel that they can afford the increase in investment, will buy something, and they will buy Mazda light.

"These lamps are all low tension; all have tubes except those thirty-six inches long, operating on 115 volts. These thirty-six inch lamps will operate on a twenty or thirty volt circuit.

"Since the cost of producing light by these sources is, in general, not less than the cost by employment of Mazda lamps, it is not expected that they will be substituted for incandescent lamps. In other words, they will come and supplement the incandescent light affording new opportunities for lighting in the very field in which the limitations of the incandescent lamp have been encountered.

"It seems very important that utility companies shall do everything that is practicable to develop worth while applications for these new sources in the lighting field which have not, heretofore, been cultivated. They offer opportunity never before available."

Cost of Plant

(*Continued from page* 290)

pansion which will come with the next period of national prosperity. At such a time, our steam generating stations can be expanded rapidly and at increment costs which are well below the present national average. These stations are well situated in respect to our present loads, and expansion of such loads should therefore result in no increases at least of transmission and substation average plant costs. While the future costs of distribution plant is doubtful, the probabilities are that the increment capacity will be supplied at lower costs than the present national average.

Summing up the foregoing considerations, it is my guess that, when the next period of great expansion comes along, the cost of adding plant capacity equal in amount to that which we have today should be substantially less than the total cost of providing the plant we now have, possibly a third less. This represents the possibilities and is based on our present scale of prices. Rising cost factors over which we have little or no control may offset these possibilities. Nevertheless, if we are to maintain our place in the vanguard of progress, we must be alert to use every advance in technology and, while maintaining our high standards of service, we must continue to strive for lower cost of plant so that when these periods of expansion come we may be still better prepared to seize the opportunity they may afford to improve system costs.

Capitalism Without Capital

By Dr. W. W. Cumberland

Economist, Wellington & Company, New York, N. Y.

An Address before the Fourth General Session of the Sixth Annual Convention of the Edison Electric Institute, Atlantic City, N. J., June 9, 1938

What is Capitalism?

WE live under what is ordinarily called a capitalistic system or a capitalistic economy. Yet few take the trouble to ask themselves what capital or capitalism means, and fewer still could give a satisfactory answer to those questions. It would be instructive and probably amusing to conduct a "Gallup poll," a "Professor Quiz" or a "street interview" on what capital and capitalism are supposed to mean to those who believe that they are living under the system. Even an inquiry directed to members of this audience would undoubtedly evoke some weird answers.

Most common of errors is to confuse capital with money. Second place is probably occupied by the pervasive belief that capital represents some oppressive and sinister force which must be valiantly fought if the economy is to be healthy and morals are to remain unimpaired. For some reason difficult to explain, the terms capital and capitalism have become clothed with mysticism not untinged by sinister implications. They are the modern equivalent of the werewolf, the hobgoblin and the wanga. In the same manner that it is an ungrateful task to disillusion a child as regards Santa Claus or to reveal that some supposedly occult power is merely sleight-of-hand, much of the obvious joy which seems to be inherent in economic fallacy is removed by discovery that capital merely consists of shovels, workhorses, delivery trucks, typewriters, looms and all of the other tools and instrumentalities by the aid of which we make a living. Since the goods and services available for our enjoyment become constantly more pleasant as the number and quality of these aids to production increase, we should suppose that every member of the community would welcome each increase and the resulting goods which become available for consumption.

Surely this simple description of capital and of capitalism cannot be correct, our advanced thinkers and master-minds will contend, for then the holy war to destroy capitalism would be the sheerest nonsense. It would imply that we wish to have fewer or poorer goods and services available for our own enjoyment.

Suspicion is prevalent and may be justified that in medicine, in psychology and in electro-physics comparatively simple processes are given ponderous names or described in abstruse terms in order to impress the layman with appearance of great learning. Economists likewise are not guiltless in this respect. If economics is defined as the process of making a living and capital is described as the tools with which a living is made, there is little room for pompous controversy, or little possibility of impressing the general public. But in essence economics and capitalism are just that simple.

Since the United States is endowed with a wide variety of material resources of amazing quantity and quality, since this country possesses an energetic and ingenious population, and since the habit of producing more than is immediately consumed has been followed from the earliest times, there need be no surprise that national wealth, national income and national well-being have consistently and rapidly increased. Some of the best studies on this subject have been made by Dr. Carl Snyder of the Federal Reserve Bank of New York, who concludes that during each year physical production in the United States has advanced something more than three per cent on the average over the preceding year, decade after decade, for one hundred and fifty years. This is a remarkable record. No complete decade occurred in which national production and national wealth failed to exceed the highest point of production and wealth which had been achieved in the preceding decade. This trend persisted from the establishment of the first settlements by Europeans until 1930.

As we approach 1940 considerable doubt is warranted as to whether the record just described will be maintained. Yet a break in this trend would be a fact of outstanding importance. Until 1930 our country had in general accepted the economic philosophy that hard work and thrift are virtues, that expanding an established enterprise or creating a new enterprise is a public service, that financial reward for producing honest goods and rendering capable services is right, both in morals and in philosophy.

During the decade of the twenties, in fact, the threshold of possibility was reached that poverty and destitution could finally be driven from the United States. In the entire history of the world there had been no time and no country which came so near to achieving this objective. Apparently the combination of science and capital by joint endeavor was about to relieve the American population from anxious concern for daily bread and transfer the age-old economy of scarcity to one of abundance, in which the human intellect and the human spirit might be expected to flourish. Vistas were opened of greater scientific accomplishments, universal education, adequate leisure, protective devices for the sick, the aged and the unemployed, satisfactory health facilities, full scope for esthetic development and gradual elimination of racial, religious and class animosities. Such was the prospect less than ten years ago, under what is now contemptuously called the "Old Deal." It was within realization, merely by continuing to follow, and in the light of experience to improve, those principles of economics and government which produced such amazingly constructive results for one hundred and fifty years.

Today we are confronted with national distress of the most critical character. Unemployment is widespread; business is frightened; class hatreds have never been so bitter; suspicion and distrust are the order of the day. Such is the mockery which the vision of ten years ago has become. To seek the reasons for this disastrous reversal is of vital importance.

A definitive inquiry would require years of study by an enormous staff. However, one aspect of the problem is undoubtedly connected with the flow of capital into industry and the return which capital has been able to obtain. This problem is largely one of fact, rather than of interpretation of causes and effects. Yet facts themselves are elusive. For example, how can physical volume of production be represented by a satisfactory common denominator of monetary value without considering commodity price levels, currency standards and the quantity and value of commodities consumed in the process of production, including appropriate allowances for depreciation, depletion and obsolescence? To what extent should any computation of national wealth be adjusted for outstanding indebtedness, so long as creditors do not consist of foreigners? If the aggregate of indebtedness exceeds the calculated value of wealth, does it mean that no wealth exists?

All of these complications will have to be avoided, as they are subjects for disputation among statistical and economic experts. But we should remember that statistics of national wealth and income, capital formation, and corporate profits are estimates at best and should be regarded as illustrative rather than as final.

Trend of National Wealth

Estimates of wealth of the United States, as compiled by the National Industrial Conference Board, aggregated $192 billion just prior to the World War. Such wealth increased to a maximum of $488.7 billion in 1920, shrank to $317.2 billion in 1921, largely due to the drastic fall of commodity prices, gradually rose to $361.8 billion in 1929, declined to $247.3 billion in 1932 and stood at $286.3 billion in 1934, which is the latest date for which the Conference Board has assembled data. However, these are estimates of wealth expressed in terms of price levels prevailing at the time and described as "current dollars." But the dollar fluctuated wildly in purchasing power between 1914 and 1920, between 1920 and 1921, between 1929 and 1932, and between 1932 and 1937. At the present moment we are experiencing another violent shock to the economy, due to commodity price instability.

If instead of considering that a dollar is a dollar, no matter what its purchasing power, we recalculate national wealth in terms of 1913 prices, we find that such wealth in 1920 was $220.9 billion rather than $488.7 billion, was $261.7 billion instead of $361.8 billion in 1929, $273.2 billion rather than $247.3 billion in 1932 and $274.3 billion rather than $286.2 billion in 1934. It should be emphasized that the ostensible stability of national wealth during the early thirties was unreal and merely a statistical illusion caused by rapidly declining commodity prices. Thus when adjustment is made for the changing value of money, the wealth of the United States advanced from 1914 to 1931, without interruption, but at a continually decelerating rate of increase. Moreover, another complication arose in 1934 when devaluation of the dollar occurred. Although statistics are not yet available, it is probable that national wealth in terms of then current dollars rose substantially in 1936 and 1937, and may have advanced moderately in terms of 1913 dollars. Obviously, national wealth is now declining abruptly in terms of current dollars, and a more moderate decline is probably occurring when stated in 1913 dollars.

From 1914 to 1934 the population of the United States increased from 97.9 million to 126.6, or by 29 per cent. When national wealth, even without adjustment for price levels, is related to the number of people in the country, we find per capita wealth in 1932 and 1933 was almost identical with the years 1913 and 1914. When adjusted to the cost of living in 1929, national wealth per capita was decidedly lower in 1934 than was the case two decades earlier. Hence the persistent increase of both total national wealth and per capita wealth in the United States, extending from the earliest days of our history until 1929, has been definitely reversed and gives no convincing indication of resuming the former upward trend.

ESTIMATES OF NATIONAL WEALTH, 1912-1934
(Billions of Dollars)

Year	Total Wealth — In 1913 Dollars	Total Wealth — In Actual Current Dollars
1912	187.1	186.3
1913	192.5	192.5
1914	196.8	192.0
1915	200.1	200.2
1916	205.1	251.2
1917	208.9	351.7
1918	212.8	400.5
1919	217.1	431.0
1920	220.9	488.7
1921	226.8	317.2
1922	231.6	320.8
1923	235.8	339.9
1924	240.4	337.9
1925	244.4	362.4
1926	248.8	356.5
1927	253.4	346.4
1928	257.3	360.1
1929	261.7	361.8
1930	266.6	329.7
1931	275.3	280.3
1932	273.2	247.3
1933	271.2	249.8
1934	274.3	286.2

(Source: February 20, 1932, Bulletin of the National Industrial Conference Board for years 1912 to 1930; data obtained orally from Conference Board for more recent years.)

Trend of National Income

National income has also been the subject of many studies. There is sufficiently close agreement among studies of first rank that estimates of the National Industrial Conference Board may be accepted with considerable confidence. Not only is the magnitude of national income of significance, but also its distribution among wage earners, those who conduct businesses and those who own property. Furthermore, substantial differences exist between the amount of income produced and the amount which is consumed in each year. Finally, perplexing questions arise as to whether payments such as those to government officials, to persons on relief and subsidies to farmers should be classified as income, since this income must first be created through private production, unless we are to believe that printing press money and government deficits represented by bonds are the equivalents of productive economic activities.

Total realized income in the United States, including payments to the regular government establishment and all other accountable income, such as relief and subsidies, was $31.0 billion in 1914, $79.1 billion in 1929, $44.4 billion in 1933 and $67.5 billion in 1937. These estimates of income are stated in current dollars. If national income is recalculated on the basis of the cost of living in 1929, very different results appear. For example, 1914 income would amount to $52.5 billion instead of $31.0 billion. There followed a gradual increase in national income to 1918, a decline to 1921, an advance to 1929 and a decline to 1933. During the latter year national income as adjusted to the 1929 cost of living was $59.2 billion, as contrasted with $44.4 billion in current dollars.

Reducing to a per capita basis, which is the important consideration in discussing national income, there was a well-defined increase from $316 per capita in 1914 to $651 per capita in 1929, from which year there was a decline to

$353 in 1933, or only $37 per capita higher than the income of 1914. However, when reduced to purchasing power of 1929, per capita income in 1914 was $536, was $651 in 1929 and $518 in 1935.

Thus per capita income in the United States, in either dollars or purchasing power, increased quite modestly from prewar times until 1929, and has shown substantial recession from that date until the present time. Of course, money income does not tell the whole story. In addition to money income our population enjoys better school houses, better roads, more adequate public health facilities and improved recreational opportunities. Possibly these compensate for lower per capita income, but the reversal in the trend from increasing to declining total national income and per capita income is a fact business men must interpret correctly if they are to arrive at correct decisions in correlating their own policies with basic economic developments.

NATIONAL INCOME IN THE UNITED STATES

Year	Accountable Realized Income in Current Dollars		Accountable Realized Income Adjusted to 1929 Cost of Living	
	Total (Billions)	Per Capita	Total (Billions)	Per Capita
1914.....	$31.0	$316	$52.5	$536
1915.....	32.3	325	54.7	551
1916.....	38.5	382	60.1	596
1917.....	46.1	451	63.1	618
1918.....	56.8	549	64.5	623
1919.....	62.9	599	62.9	599
1920.....	68.4	642	57.9	543
1921.....	56.8	525	55.7	515
1922.....	57.3	521	59.1	538
1923.....	65.7	589	65.7	589
1924.....	67.0	592	66.3	586
1925.....	70.1	610	67.4	587
1926.....	73.5	631	70.6	606
1927.....	73.8	625	72.4	613
1928.....	75.8	632	75.0	626
1929.....	79.1	651	79.1	651
1930.....	72.2	586	74.4	604
1931.....	60.1	484	69.1	557
1932.....	46.5	372	59.6	477
1933.....	44.4	353	59.2	481
1934.....	50.4	398	63.8	504
1935.....	54.9	431	66.1	518
1936.....	64.0	498	(Not	
1937.....	67.5*	522*	available)	

* Estimated

(Source: April, 1937, Bulletin of the National Industrial Conference Board.)

That substantial difference existed between income produced and income paid out is shown by Department of Commerce estimates, ranging from an excess of $2.583 billion income produced in 1929 to an excess of $8.942 billion income paid out in 1932, as indicated by the following table:

Year	National Income Produced (In Millions	National Income Paid Out of Dollars)	Excess or Deficit
1929.....	$80,757	$78,174	+$2,583
1930.....	67,969	72,872	— 4,903
1931.....	53,499	61,551	— 8,052
1932.....	39,545	48,487	— 8,942
1933.....	41,813	44,907	— 3,094
1934.....	49,575	51,004	— 1,429
1935.....	54,955	54,645	+ 310
1936.....	63,799	62,056	+ 1,743

Beginning with 1930 and extending through 1934, $26.420 billion was paid out as income over what was produced. In large measures such disbursements represented the efforts of corporations to maintain their organizations, in spite of unprofitable business. This record is an excellent answer to those who declaim that business is entirely lacking in humanitarian instincts.

Over a long period of time profound change has occurred in the composition of realized national income. For example, agricultural income was almost identical in 1914 and 1935, although total national income had increased 77 per cent in terms of current dollars. At the first date, agricultural income constituted 18.82 per cent of total realized production income, whereas in 1935 it was only 11.07 per cent. A striking contrast is found in the contribution which the electric and gas industries made to national income. In 1914 they contributed but seventy-nine one-hundredths of one per cent. This percentage consistently increased to 2.02 in 1935. Another activity also showed a high growth factor. This was government. Payments on government account absorbed six per cent of national income in 1914, whereas they were responsible for 13.58 per cent in 1935. Government has been one of the most dynamic elements in the national economy.

In 1914 salaries and wages absorbed 61.3 per cent of national income. In 1935 this percentage was 67.7. Those who conducted businesses obtained 25.2 per cent of the national income in 1914. This fell to 21.5 per cent in 1935. Dividends, interest, rents and royalties aggregated 13.6 per cent of the national income in 1914 and 10.8 per cent in 1935. Hence the relative position of labor improved while that of capital declined. Possibly in this fact is found part of the answer for the economic distress which at present prevails. Perhaps the blood stream of capitalism has become so anemic that vigorous economic life is impossible.

Trend in Capital Formation

An even more complicated task than to determine national income, together with its distribution among claimants to income, is to ascertain the annual formation of capital, if any, and the sources from which such capital is derived. The National Bureau of Economic Research has conducted extensive studies on this question and recently published its findings.

Gross capital formation means the amount of net capital created, plus the depreciation, depletion and obsolescence involved in the annual processes of production. Gross capital formation averaged $17.324 billion annually from 1919 to 1930. From 1931 to 1935 gross capital formation shrank to an average of $6.189 billion, or by 64.3 per cent. It constituted 24.2 per cent of national income during the first period and 13.13 per cent in the second. This is a striking fact and goes far to explain the absence of sustained recovery, even acknowledging that capital formation was supernormal during the first period and subnormal during the second.

Even more striking is the relation of net capital formation to national income. From 1919 to 1930, net capital in the United States increased at an annual average of $8.294 billion; capital shrinkage occurred from 1931 to 1935 at the average rate of $1.749 billion per year. During the first period net capital formation, amounting to 11.59 per cent of national income, was accompanied by consistent increase in national well-being. When the formation of capital was replaced by a capital deficit, standards of living fell sharply. Facts like these have to be explained by those who contend that the United States requires no further investment of capital, that there is danger of oversaving and that neither capital nor enterprise requires nor deserves generous reward.

During the years when the United States was making consistent economic progress new capital for the most part proceeded from three sources:

1. Savings by persons of modest income, which usually took the form of insurance policies, savings bank accounts and build- and loan memberships.
2. Savings by persons of more than average income, which characteristically flowed into new enterprises and into the expansion of existing enterprises.
3. Earnings retained by corporations for expansion or improvement of their own businesses.

New capital funds from the first source largely took the form of senior securities in existing enterprises, in so far as they were canalized by insurance companies and savings banks. However, substantial amounts also went into equities, many of them of dubious economic merit and some constituting bare-faced frauds.

Enterprise capital for promising new businesses as well as both senior and junior capital for existing businesses was largely derived from persons with incomes higher than the general average. Such persons not only had economic justification for assuming risks, but they had better technical training and experience for appraising business risks. From such sources were derived the funds for that constant expansion and improvement of American industry which resulted over many decades in cumulative expansion of national production by something more than three per cent per year. Capital from this source frequently took the form of medium grade bonds. Even a term was devised to represent such bonds. They were called "business men's investments." There was a definite tendency, however, to prefer equities to bonds, since the well-established growth factor in American industry had demonstrated the desirability of soundly selected common stocks.

Prior to the enactment of the tax on undistributed corporate profits, it was the practice of American corporations to retain a substantial portion of earnings for purposes of expansion and improvement. Since progressively larger percentages of total American enterprise are conducted by corporations, there is little doubt that a large and increasing proportion of what was at the time believed to be new capital was represented by corporate earnings retained in the business. Experience has later shown that much of these supposed earnings were in reality overstatements of earnings.

Both advantages and abuses can be attributed to corporate savings. On the positive side may be mentioned:

1. When they take the form of securities they usually appear as equities, rather than as bonds or preferred stocks, and thus improve the capital structure of corporations. Frequently earnings retained in the business are not capitalized as securities, with the result that securities already outstanding are gradually fortified by greater assets and higher earnings.
2. Retention of earnings by corporations probably results in net additions to the physical assets of the community, in comparison with what they would be if earnings were fully distributed as dividends. Withholding of earnings, if exercised in reasonable fashion, cannot be criticized as inflicting hardship on stockholders, since the individual dividend policies of corporations are matters of common knowledge, and persons who wish to obtain maximum dividends, as contrasted with capital appreciation through corporate savings, should not purchase stocks of corporations which practice conservative dividend policies.
3. Theoretically, corporate managements should have more accurate knowledge of profitable avenues for capital utilization than the ordinary individual. Hence earnings should only be retained if they can be profitably employed, and observance of this requirement should in turn minimize those serious capital losses which experience amply shows are an inevitable accompaniment of investments by inexperienced individuals.

On the negative side can be cited instances of corporate mismanagement of earnings retained in the business. Such mismanagement ranges from failure to earn an adequate return, through various gradations of ill-advised adventures in expansion and extravagant conduct of the business merely because more capital is available, to flagrant violations of trust by means of excursions into unrelated activities, purchase of additional properties on the basis of favoritism and many other exemplifications of bad thinking or bad morals. On balance the advantages far outweigh the abuses. Corporations were able to develop mass production and distribution to the great benefit of the consumer, to conduct research and institute new processes which would have been completely beyond the financial capacity of the ordinary individual and could only be justified and financed through access to earnings retained in the business. In fact, corporate savings became so formidable in quantity and the use of such savings resulted in such important improvements in producing existing commodities or developing new commodities that widespread fear arose lest our country was faced with oversaving and overinvestment.

Unfortunately, there are no satisfactory studies with regard to the contributions of new capital by the three principal sources which have been mentioned. Phenomenal growth of life insurance in the United States affords the presumption that the proportionate contributions to net capital formation by those in the lower income group were tending to increase. There is equal likelihood that the percentage derived from corporate savings was increasing. This would imply that capital contributions from individuals in the middle and higher income groups were declining. Of course these statements apply to those years in which net capital formation was taking

ANNUAL ESTIMATES OF NATIONAL PRODUCT, CAPITAL FORMATION AND CONSUMERS' OUTLAY, 1919-1935
(Millions of Dollars)

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
1 Gross national product	68,750	82,836	66,148	67,186	78,214	78,791	83,413	88,780	86,778	90,053	93,640	82,723	64,751	47,202	46,538	55,765	61,243
2 Gross capital formation, Variant I	19,341	22,100	11,488	13,282	18,199	15,245	19,211	19,037	18,208	17,824	20,298	13,662	8,464	3,147	4,268	6,061	9,008
3 National income	59,926	72,386	58,343	59,706	69,706	70,369	74,846	79,477	77,489	80,397	83,424	72,940	56,010	39,628	39,283	47,849	53,035
4 Net capital formation, inclusive total	10,517	11,650	3,683	5,802	9,691	6,823	10,644	9,734	8,859	8,168	10,082	3,879	-278	-4,427	-2,987	-1,855	800
5 Consumers' outlay, line 1 - line 2 or line 3 - line 4	49,409	60,736	54,660	53,904	60,015	63,546	64,202	69,743	68,570	72,229	73,342	69,061	56,288	44,055	42,270	49,704	52,235
6 Consumers' outlay	49,409	60,736	54,660	53,904	60,015	63,546	64,202	69,743	68,570	72,229	73,342	69,061	56,288	44,055	42,270	49,704	52,235
7 Perishable commodities	24,646	27,278	22,047	21,410	22,967	23,750	25,404	27,107	26,672	27,348	28,550	26,395	21,481	16,147	16,133	20,756	23,095
8 Semidurable commodities	10,451	12,156	9,736	10,023	11,124	10,735	11,761	11,917	12,032	12,193	12,382	10,731	9,024	6,722	6,513	7,512	8,151
9 Consumers' durable commodities	5,987	6,921	5,570	6,181	7,983	7,900	9,056	9,445	8,890	9,174	9,913	7,550	5,748	3,606	3,882	4,686	5,918
10 Total commodities, line 7 + line 8 + line 9	41,084	46,355	37,353	37,614	42,234	42,385	45,821	48,469	47,594	48,715	50,845	44,676	36,253	26,475	26,528	32,954	37,164
11 Services not embodied in new commodities, line 6 - line 10	8,325	14,381	17,307	16,290	17,781	21,161	18,381	21,274	20,976	23,514	22,497	24,385	20,035	15,380	13,742	16,750	15,071

Source: Simon Kuznets National Income and Capital Formation 1919-1935 published by National Bureau of Economic Research.

place and before distortions had been introduced through such devices as confiscatory income taxes and punitive taxes on undistributed corporate earnings.

Three other sources of new capital should be mentioned. Each was important during the 'twenties. The nature and significance of each is obscure. From 1921 to 1927 bank deposits increased enormously, and banks were heavy purchasers of corporate bonds. Proceeds of bond issues became available to corporations for expansion and improvement of plant. But in considerable degree the entire process was a credit operation, rather than a manifestation of true savings. Subsequently many of the banks became insolvent because of declining prices in their corporate bond portfolios, yet the physical plant and machinery created from the bond issues continued to exist, although much of it became of doubtful value.

After 1927 brokers loans increased to fantastic proportions. Only a small fraction of this increase represented creation of new credit by banks; most of it took the form of loans for account of others and was largely composed of liquid resources for which corporations had found no permanent use. These loans for account of others were employed in the double process of absorbing the enormous volume of new securities then appearing on the market and of bidding up the prices of securities already outstanding. In so far as loans for account of others were committed in new securities, the issuing corporations obtained additional capital, much of which was later utilized for meeting losses of the depression.

During most of the 'twenties, and especially in 1928 and 1929, capital gains were of outstanding importance. A substantial part of such gains was also employed for purchasing issues of new securities. But like credit operations by banks and loans for account of others, capital gains are of a different nature than true savings, even though in some respects they are interchangeable with savings in the apparent formation of capital.

"Apparent formation of capital" is used advisedly, because all of the sources of capital which have been described have not been sufficient to prevent a drastic decrease in the amount of capital invested in American corporations engaged in manufacturing, trade, transportation and the public utilities. From $91 billion invested in these industries for the year 1922, Colonel Ayres shows that there was consistent increase to $142 billion in 1930. This was a total increase of 56 per cent, or seven per cent annually. Since that date, there has been an uninterrupted decline to $112 billion in 1935. Thus the total decline was $30 billion, or 21 per cent, which amounted to 4.2 per cent annually. No later data are available. But the implications are clear. American private enterprise is running down.

Trend of New Security Issues

New capital is by no means identical with new security issues, but such issues are significant as a major element of new capital and also as indicating the trend in the magnitude of capital formation and in the distribution of new capital as regards form and economic objective. New security issues include both refunding operations and issues which represent additional capital.

According to Moody's Investors Service, stocks and bonds amounting to $69.5 billion were issued in the United States during the years 1920 to 1937. Of this total, $5.171 billion, or 7.44 per cent, consisted of foreign issues. Refunding operations accounted for $17.908 billion, or 25.7 per cent. Thus security issues involving new capital totaled $51.591 billion, or $2.866 billion per year. However, from 1920 to 1930 the average was $4.217 billion, whereas the seven most recent years produced issues of new capital at the rate of only $743 million per year. New capital issues thus shrank by 82.4 per cent.

Bonds accounted for $32.307 billion, or 62.6 per cent of the total; stocks were issued to the value of $19.284 billion, or 37.4 per cent. Thus bonds accounted for five-eighths and stocks for three-eighths of the total. There has been no pronounced trend in the relation between stocks and bonds, but in 1928 the value of new issues of stocks slightly exceeded that of bonds, and in 1929 stocks were issued to a value of much more than twice that of bonds.

Analysis of new issues in accordance with the use to which capital was put discloses several important facts. Of most significance is the fact that railroads obtained $6.366 billion of new capital from securities issued in the last eighteen years, but only $510 million, or 8.05 per cent, has been obtained through stock issues. From 1931 to date, not a dollar of railway stocks, either preferred or common, has been sold to the public. Accordingly, there is ample evidence that the capital structures of railroads have deteriorated enormously. Mere statement of the form which new financing has had to take demonstrates that railroads constitute a sick industry.

Public utilities obtained from the public $16.759 billion from 1920 to 1937, or an average of $931 million per year. Bonds were issued in the amount of $10.769 billion, or 64.25 per cent of the total; stocks amounted to $5.99 billion, or 35.75 per cent.

New capital for the utility industry showed practically uninterrupted growth from $382 million in 1920 to $2.365 billion in 1930, and averaged $1.372 billion for those eleven years. New capital to the amount of $949 million was obtained in 1931. During the past six years, however, this industry which was previously the most dynamic major factor in American economic life only needed or was able to obtain, as the case might be, $715 million of public capital, which is an average of $119 million per year, and a shrinkage of 92 per cent from the first period. For the lowest year, 1933, this industry issued but $34 million of new capital, a decline of 98.56 per cent from 1930. In 1937, a year of active business, the utility industry obtained $150 million of capital from investors, a decline of 93.65 per cent from 1930.

Industrial financing during the period under discussion totaled $28.466 billion, consisting of $15.682 billion in bonds and $12.784 billion in stocks. Thus the ratio of bonds and stocks to the total was 55 and 45 per cent, respectively. Industrial financing rose from slightly less than one billion dollars in 1921 to more than six billion dollars in 1929, with an average of $2.355 billion per year from 1920 to 1930. For the succeeding seven years the average was $365 million per year, reaching a low of $38 million in 1932, which was 99.4 per cent less than in 1929. New issues of industrial capital during the last seven years thus shrank 94 per cent from the 1929 level and 85 per cent below the average for 1920 to 1930.

It is apparent that equity capital has been of greatest relative importance in industrial financing, that utility financing closely approximates the general average between stocks and bonds, and that railroads in general have been unable to obtain equity money. Is it only an accident that failure to obtain equity capital has been in direct proportion to the degree of control exercised by governmental authorities?

One of the most active controversies

New Security Issues

(Including Foreign and Excluding Refunding Issues)

(In Millions of Dollars)

	Railroad			Utility			Industrial-Financial			All Groups		
Year	Bonds	Stocks	Total	Bonds	Stocks	Total	Bonds	Stocks	Total	Bonds	Stocks	Total
1920	322	-	322	327	55	382	1,026	980	2,006	1,675	1,035	2,710
1921	353	-	353	374	117	491	827	152	979	1,554	269	1,823
1922	497	27	524	450	276	726	815	271	1,086	1,762	574	2,336
1923	437	27	464	637	250	887	969	382	1,351	2,043	659	2,702
1924	724	56	780	829	497	1,326	939	277	1,216	2,492	830	3,322
1925	364	16	380	975	521	1,496	1,550	674	2,224	2,889	1,211	4,100
1926	305	41	346	1,139	465	1,604	1,732	675	2,407	3,176	1,181	4,357
1927	415	91	506	1,292	783	2,075	2,173	619	2,792	3,880	1,493	5,373
1928	311	53	364	1,054	757	1,811	1,644	2,261	3,905	3,009	3,071	6,080
1929	413	133	546	703	1,229	1,932	1,434	4,727	6,161	2,550	6,089	8,639
1930	731	66	797	1,604	761	2,365	1,064	718	1,782	3,399	1,545	4,944
1931	346	-	346	696	253	949	410	58	468	1,452	311	1,763
1932	13	-	13	268	6	274	24	14	38	305	20	325
1933	12	-	12	27	7	34	1	114	115	40	121	161
1934	73	-	73	49	-	49	22	35	57	144	35	179
1935	73	-	73	82	2	84	179	67	246	334	69	403
1936	267	-	267	119	5	124	461	363	824	847	368	1,215
1937	200	-	200	144	6	150	412	397	809	756	403	1,159
Total	5,856	510	6,366	10,769	5,990	16,759	15,682	12,784	28,466	32,307	19,284	51,591

Data obtained from Moody's Investors Service.

in modern economics concerns the nature of interest, the effect of interest on capital accumulation and the relations between saving and investment. Generally accepted conclusions have not yet emerged, but we shall probably make no major error in believing that, other things being equal, investment funds tend to increase when return on capital increases. Although many technical difficulties are encountered in calculating corporate earnings, so that the results should be accepted as only approximately correct, the course of industrial profits in the United States must be studied if we are to form accurate judgments in regard to the outlook for further capital investments. The National City Bank of New York has for years assembled and classified industrial profits, and the findings of this institution will be utilized. Profits can be considered from two points of view:

1. The relation between sales and net profits.

2. The relation between net corporate worth and net profits.

Neither of these calculations sets forth the full contribution of capital to economic activity. For net earnings are shown after depreciation, interest, taxes, and other charges and reserves. Yet payment of interest and of taxes presupposes industrial productivity of a magnitude which would be impossible in the absence of capital. In the railroad industry, for example, large sums of capital are invested which for many years have been able to earn little more than fixed charges, although total capital in that industry far exceeds bonded indebtedness. Part of the equity capital of railroads has been required to assist in the effort to earn fixed charges. In the case of some railroads both equity and loan capital have merely been working for the government, since many varieties of taxes take precedence over interest charges.

Determination of net profits is easy, however, in comparison with the task of calculating the net worth of corporations. Corporate balance sheets are necessarily misleading, even when there is no desire to mislead. They afford almost perfect weapons for committing economic and financial atrocities when used by the ignorant or the unscrupulous. Even if a balance sheet could be constructed so as to represent economic reality as of a given day, that balance sheet would be incorrect on any preceding or subsequent day. This is because price levels constantly fluctuate, because there is no possibility of establishing depreciation rates or reserves which will be equivalent to physical deterioration, because the factor of obsolescence cannot be exactly computed and for many other reasons.

Balance sheets are no longer taken as seriously by investors or accountants as was formerly the case, and it is fair to predict that the importance of this venerable accounting device will suffer further eclipse. Possibly balance sheets as at present constructed will cease to exist. Current assets and current liabilities can be computed with reasonable accuracy, and the relationship between these two items is a factor of utmost significance as regards the position and prospects of a corporation. But experience shows that the amount of fixed capital devoted to an enterprise has little relation to earnings, while earning power determines the current value of capital already in the enterprise. Earnings also set the boundaries of interest payments and dividend disbursements and determine the possibility of obtaining additional funds from the capital markets.

Net worth of a corporation is therefore in reality a hypothetical figure derived by deducting various fixed liabilities such as debts and certain computed liabilities such as reserves for depreciation, depletion and obsolescence from another set of figures called assets, some of which have accurately calculable values, such as cash and to a less extent inventories and receivables, but most of which cannot be stated with even close approximation to accuracy, such as the value of fixed property, of patents and of good will. Furthermore, it is well recognized that some corporations follow the practice of understating the value of assets, whereas others ascribe generous values to their physical properties and intangibles. However, this variation in construction of asset accounts and in depreciation policies results in narrowing the margin of error in computing net worth of corporations as a whole. This is because overstatements by some corporations are compensated by understatements on the part of others. Nevertheless, figures which purport to express the net worth of corporations are arbitrary at best and should only be accepted for purposes of illustration.

With these explanations and reservations we may examine the history of corporate profits in the United States during recent years. Since corporations must file annual returns with the Bureau of Internal Revenue, the reports of this Bureau are available. Many corporations employ other methods of accounting in reporting to stockholders the results of annual operations. This is not the place to present a critical analysis of the merits and demerits of each method of reporting. We shall first examine corporate profits as reported to stockholders.

In preparing its studies of profits of leading corporations, the National City Bank of New York was unable to present strictly comparable data over a considerable period of years. Some corporations disappear as separate entities; others grow to such importance that they must be included in a compilation which purports to be representative of the trend and results of American corporate activity. While the totals of corporate profits, of net worth, and of sales are not comparable, the percentage relation of net profits to sales and to net worth may usefully be compared from year to year.

Have manufacturing and merchandis-

ing corporations in the United States derived unreasonable profits in relation to sales? Data for recent years seem to give a negative answer to this question. Leading manufacturing and merchandising corporations in 1933 earned 1.9 per cent on sales. A consistent increase occurred to 7.0 per cent in 1936, and profits for 1937 aggregated 6.6 per cent of sales. In view of the hazards of obsolescence and possible losses through declining commodity prices, no convincing case could be made that manufacturing and merchandising corporations have retained an unjustified margin of profit in relation to sales. This conclusion is strengthened when it is recalled that leading corporations included in the compilation of the National City Bank have shown distinctly more favorable earnings than American corporations as a whole.

Electric utility companies in the United States, including the coordinate utility services of these companies, had total operating revenues of $2.392 billion in 1936, and net income available for dividends of $468 million. Thus the industry earned 19.57 per cent on what would be equivalent to net sales for industrial corporations. Although data for 1937 are not complete, it appears that the ratio of net income to total operating revenues fell to about 18 per cent. In connection with this apparently high return on net sales for utilities it must be recalled that annual sales for a utility may average no more than one-sixth the value of invested capital, whereas annual sales of a manufacturing corporation are likely to be one or more times the value of fixed assets. Hence the ratio of earnings to sales must be much higher for a utility in order to afford an equal return on invested assets. This is also true for railroads.

Gross income for all railroads in the United States was $4.166 billion in 1937. Income after fixed charges, which corresponds to net profits on sales for industrial corporations, was $111 million, or 2.66 per cent of gross income. Mere statement of this situation is sufficient indication of the reason why railroads can attract no new capital.

Corporate profits in relation to net worth have shown considerable similarity with profits in relation to sales. From a pre-depression average of something more than 10 per cent for leading companies there was a sharp decline to 0.3 per cent return on net worth in 1932, with a recovery to 7.3 per cent in 1936 and a decline to 6.7 per cent in 1937. However, there was wide variation in the relation of net profit to net worth as among the various types of corporations.

During 1929 the leading merchandising and manufacturing establishments earned 12.6 per cent on net worth, utilities earned 11.1 per cent, and railroads had to be satisfied with 5.9 per cent. All categories declined abruptly during the depression, with industrials showing a net deficit during the single year 1932 and railroads reporting deficits from 1932 to 1935. Utility profits in relation to net worth declined from 11.0 per cent in 1929 to 5.1 per cent in 1934, from which year there has been consistent annual improvement to 6.1 per cent in 1937.

Whether calculated in relation to sales or to net worth, profits consist of such remainder as may exist after deducting all costs of production, both direct and indirect. If miscalculation has occurred in computing costs, it is obvious that net profits would also be incorrectly stated. Many costs such as for wages, materials and taxes are definitely ascertainable. But reserves for credit losses, charges for depreciation and several other items are matters of opinion and are treated in strikingly diverse fashion by different corporations. In the aggregate these computed costs, as contrasted with direct cash outlays, are of such magnitude that they vitally affect reported net profit. In many instances profit could be turned to loss or loss to profit by mere change in policies of computing depreciation and other reserves.

In actual practice there is strong probability that American corporations as a whole have been guilty of overstatement of profits. This is unquestionably true for railroads, is highly probable for utilities and of moderate likelihood as regards manufacturing and commercial enterprises. Evidence supporting this opinion is derived from the constant necessity of corporations to write down the value of capital assets, to increase depreciation rates and to make substantial charges to surplus upon the sale or retirement of physical property. There is no way of ascertaining the degree by which corporate profits have been overstated. But from 1931 to the present time four outstanding industrial corporations found it necessary to write down the value of their physical assets by 13 per cent. Write-downs for three of these companies exceeded total profits for the entire period by more than 50 per cent, indicating that in reality there were less than no net earnings, although earnings of more than $250 million were reported. However, profits of all corporations in the United States from 1917 to 1935 have been reported as equaling

PROFITS OF LEADING CORPORATIONS AS RELATED TO NET SALES—1933-1937
(In Millions of Dollars)

Number of Companies		Year	Net Sales	Net Profits[1]	Profits to Sales Per Cent
240	Manufacturing	1933	$5,598	$49	0.9
45	Merchandising		2,288	99	4.3
285	Total		$7,886	$148	1.9
216	Manufacturing	1934	$7,853	$242	3.1
45	Merchandising		2,659	123	4.6
261	Total		$10,512	$365	3.5
331	Manufacturing	1935	$11,559	$646	5.6
59	Merchandising		2,905	138	4.7
390	Total		$14,464	$784	5.4
577	Manufacturing	1936	$16,062	$1,219	7.6
93	Merchandising		4,080	197	4.8
670	Total		$20,142	$1,416	7.0
615	Manufacturing	1937	$20,474	$1,511	7.4
95	Merchandising		5,085	184	3.6
710	Total		$25,559	$1,695	6.6

[1] Including investments and miscellaneous income.

(Source: Bulletins of National City Bank of New York and correspondence with this Bank.)

3.02 per cent of gross income. When compared with net worth during the years 1925 to 1935, all corporations reported net profits of only 1.86 per cent. Therefore it is clear that even slight changes in computing costs would have affected reported net profits in spectacular fashion. In fact, profits might have disappeared.

Since corporate profits as reported are one of the most important sources of capital formation, whether by retention of earnings by corporations themselves or savings by persons who receive dividends, the fact that such profits are a small percentage of gross income and of net worth shows the narrow margin within which contributions from this source can be obtained. When it is considered that corporate profits have probably been overstated, we are forced to the conclusion that on balance corporations, taken as a whole, have contributed little or nothing to capital formation. Some students believe that American corporate enterprise has not even been self-sustaining, and this appears to be true at least from 1931 to the present time.

Trend of Taxes

Although net profits during recent years have been negligible, taxes have steadily increased. All active corporations in the United States paid $3.363 billion in taxes for the year 1935, or almost as much as the $3.415 billion paid in 1929. Yet net income of these corporations was $1.674 billion in 1935, or only 20.7 per cent of the $8.084 billion reported in 1929. During the entire period for which statistics of income have been compiled by the Treasury Department, or from 1917 to 1935, taxes averaged 2.52 per cent of gross income, in comparison with 3.02 per cent for net profits. From 1925 to 1935 taxes equalled 2.20 per cent of net worth, in comparison with profits of 1.86 per cent.

For the years 1930 to 1935 all of the corporations in the United States showed a net deficit of $7.687 billion, which was an annual average loss of 1.23 per cent on gross income and of 0.88 per cent on net worth. While corporations as a whole were losing $7.687 billion after charges, they paid $16.680 billion in taxes, an annual average of 2.66 per cent on gross income and 1.92 per cent on net worth. Thus it is apparent that government has absorbed a substantial and rapidly increasing proportion of corporate earnings which would otherwise have been available for the formation of capital. While some part of tax receipts may finally appear as an addition to national capital, in the form of public works or otherwise there can be no doubt that the magnitude of the tax burden has gone far toward explaining the deficit in capital formation throughout the 'thirties.

Outlook for Profits and New Financing

Knowledge and analysis of basic facts and trends of American industry can alone justify predictions about the future. Ample evidence has been presented to explain why American enterprise is neither prosperous nor promising. Consciously or by inadvertence, we are faced with a situation in which little enterprise capital is being formed and in which it could not be obtained by industry in large amounts, because of the inadequate reward. In addition, the economy is operating at levels which require little if any new capital. Many industries already have excess capacity. This statement applies to the utilities as well as to other branches of industry in spite of the general opinion that cessation of government persecution and competition would cause the utilities to undertake enormous capital expenditures.

Orders for electrical equipment during the first quarter of 1938 were little more than half as large as during the first quarter of 1937. Orders for the second quarter of the present year are expected to be lower. Issues of new capital for industry as a whole during the first four months of 1938 amounted to $313.8 million, or a decline of 73.4 per cent from the $1.181 billion for the same period of the prior year. Eliminating refunding issues, actual new capital was $123.4 million, as compared with $468.4 million, or a shrinkage of 73.6

PROFITS OF LEADING CORPORATIONS FOR THE YEARS 1928 TO 1937

(In Millions of Dollars)

Number of Companies		Year	Net Worth January 1	Net Profit	Ratio of Net Profit to Net Worth Per Cent
1,520	Industrials	1928	$30,378	$3,549	11.7
....	Railroads		.....	.....	...
....	Utilities		.....	.....	...
....	Grand Total		$30,378	$3,549	11.7
1,560	Industrials	1929	$32,186	$4,063	12.6
155	Railroads		14,604	861	5.9
51	Utilities		4,915	542	11.0
1,900	Grand Total		$56,055	$5,983	10.6
1,560	Industrials	1930	$35,485	$2,246	6.3
155	Railroads		15,176	524	3.5
51	Utilities		5,830	551	9.5
1,900	Grand Total		$61,581	$3,516	5.7
1,410	Industrials	1931	$28,226	$ 726	2.5
165	Railroads		12,998	116	0.9
80	Utilities		4,883	393	8.0
1,810	Grand Total		$52,524	$1,275	2.4
1,475	Industrials	1932	$27,367	D-97	D-0.4
150	Railroads		12,721	D–151	D–1.2
85	Utilities		5,541	354	6.4
1,925	Grand Total		$53,452	$ 151	0.3
1,435	Industrials	1933	$23,868	$ 640	2.7
149	Railroads		12,394	D– 14	D–0.1
90	Utilities		5,570	301	5.4
1,935	Grand Total		$49,774	$1,314	2.6
1,490	Industrials	1934	$25,156	$1,091	4.3
149	Railroads		12,188	D– 29	D–0.2
95	Utilities		5,451	280	5.1
2,010	Grand Total		$50,660	$1,789	3.5
1,600	Industrials	1935	$24,426	$1,606	6.6
144	Railroads		11,988	D– 1	D–
94	Utilities		5,188	284	5.5
2,140	Grand Total		$49,291	$2,473	5.0
1,720	Industrials	1936	$24,805	$2,524	10.2
141	Railroads		13,782	165	1.2
90	Utilities		4,576	269	5.9
2,280	Grand Total		$51,447	$3,747	7.3
1,720	Industrials	1937	$25,531	$2,744	10.7
141	Railroads		13,618	99	0.7
90	Utilities		4,523	276	6.1
2,280	Grand Total		$52,293	$3,505	6.7

(Source: Bulletins of the National City Bank and correspondence with this Bank)

NET INCOME AND TAXES IN RELATION TO GROSS INCOME AND NET WORTH OF ALL CORPORATIONS IN THE UNITED STATES

(In Millions of Dollars)

Year	Gross Income	Taxes Paid	Net Income After Taxes	Net Income to Gross Per cent	Net Worth	Net Income to Net Worth Per cent
1917	$84,693	$3,183	$7,958	9.39	.....	...
1918	87,031	3,987	4,659	5.35	.....	...
1919	100,473	3,107	6,419	6.38	.....	...
1920	118,956	2,823	4,469	3.75	.....	...
1921	91,947	2,175	D–55	D–0.06	.....	...
1922	101,315	2,302	4,380	4.32	.....	...
1923	119,020	2,572	5,827	4.89	.....	...
1924	119,747	2,552	4,998	4.17	.....	...
1925	136,711	2,900*	6,971	5.09	$110,290	6.32
1926	142,629	3,108	6,774	4.74	113,957	5.94
1927	144,899	3,145	5,880	4.06	119,260	4.93
1928	157,848	3,387	7,636	4.83	132,403	5.76
1929	161,158	3,415	8,084	5.01	142,887	5.65
1930	138,848	3,009	1,375	0.99	160,369	0.86
1931	108,057	2,630	D–3,145	D–2.91	161,082	D–1.95
1932	81,638	2,373	D–5,375	D–6.58	143,263	D–3.75
1933	84,234	2,547	D–2,378	D–2.82	133,569	D–1.78
1934	101,495	2,758	162	0.16	127,578	0.13
1935	111,636	3,363	1,674	1.50	141,585	1.18
Average 1917–1935	$115,386	$2,912	$3,490	3.02	$135,113**	1.86**

D–Deficit

* Partly Estimated

** 1925-1935 only. Comparable data for previous years not reported.

(Source: Bulletins of National City Bank. Data compiled from annual Statistics of Income, Treasury Department)

per cent. There can be no reasonable doubt that when corporate issues of new capital for the entire United States are proceeding at a rate of less than $400 million per year, private enterprise is definitely contracting.

In contrast, public debt is expanding at so rapid a rate that fears for future federal credit are justified. Part of the forced savings of the community, which take the form of taxes, and part of the increased federal debt later appear as economic enterprises. For example, the Federal Power Commission recently reported that publicly owned electric plants increased output by 20.59 per cent during 1937, at the same time that private utilities were reporting an increase of 7.83 per cent. Installed capacity of publicly owned plants increased 11.21 per cent; that of privately owned plants 0.59 per cent. Each increase in publicly owned capacity not only prevents construction of private capacity but also tends to destroy the value of private capacity already installed.

Thus the outlook for new financing for American industry as a whole is definitely unfavorable, while prospects for creation of additional public debt have seldom been better. This means further drain on the earnings of private industry, at the very time when corporate profits have shrunk two-thirds below the level of last year and as yet have shown no indication that the contracting phase has terminated.

INTERPRETATIONS

WE have now reviewed national wealth and income, the formation of capital, the relation of corporate earnings to gross sales and to net worth, the comparative magnitude of the tax burden, and the immediate outlook for profits and new financing. A few conclusions are obvious. National wealth and national income have not increased during recent years at the tempo which was persistently characteristic of earlier decades; rapid formation of capital until 1929 has been superseded by net capital losses since that date; corporate earnings have shrunk drastically whether in relation to sales or to net worth; taxes alone have maintained the previous trend, both on an absolute and a relative basis.

In seeking the reasons for these far-reaching reversals of long-established trends, there are several facts which deserve attention:

First. Taxes on incomes and on capital gains are so high in the upper brackets that those elements of the population which formerly constituted the major source of enterprise capital have been driven into government securities, particularly those with tax exempt features. Evidence is overwhelming that this is true, although no means exist for determining the precise degree of diversion of productive capital into government securities, which certainly represent capital formation to only a minor degree.

Second. An increasing proportion of national savings has taken an institutionalized form, such as life insurance policies, savings bank accounts, baby bonds of the government, participation in investment trusts or supervision of financial operations by investment counselors. In the aggregate this canalizing of investment funds has resulted in increased rigidity, has diminished the proportion of national savings which is devoted to equities and has emphasized investment in well-established corporations as contrasted with new enterprises.

Third. For the last two years corporations have not retained as large a proportion of earnings as has been customary with American industry, because of the punitive taxes on undistributed profits. It is highly doubtful whether as large a percentage of earnings distributed as dividends took the form of new capital as would have been the case if corporations had felt free to retain that fraction of earnings which was viewed as desirable by the management. This reduction of savings was in fact one of the objectives of the tax, as its sponsors were adherents of the theory that saving and investment in the United States are excessive.

Fourth. Net profits in relation to gross sales and to net worth have sharply declined from the levels formerly considered as normal. It is open to question whether in recent years profits have been adequate to cover possible deficiencies in charges for depreciation, depletion, obsolescence, and other contingencies and still leave sufficient incentive for investors to contribute additional capital to industry.

Fifth. Policies recently pursued by the Treasury and by the Federal Reserve Banks have brought about interest rates which in many respects are the lowest in the history of this country or any other country. Vast refunding operations have been the consequence of these fictitiously low interest rates. As a result, total interest payments have been substantially reduced, but savings in interest have not been reflected in increased equity earnings but have largely been absorbed by rising costs and to a less extent by lower prices to consumers.

Sixth. Government concern lest profits from enterprise be excessive has caused national income to decrease. This in turn reduces the amount of new capital available for investment and also forces this restricted capital fund to seek a protected position, priority and tax exemption, none of which can be found in equity securities. Thus increasing regulation of business by government and increasing antipathy of government toward profits have been accompanied by diminishing capital funds available for investment and by reduction of the proportion of investment funds which has been willing to go into equities.

Seventh. Although the United States admittedly has conspicuous supplies of capital seeking profitable investment, foreign capital has been imported in the amount of four billion dollars from 1934 to 1937. Much of

this huge sum has been committed in American securities. At the same time large but unknown quantities of American capital have gone abroad. Thus foreigners have increased their claims upon income from the American economy, whereas a large percentage of income on American foreign investments is retained abroad in order to escape the effects of American fiscal policies. This two-fold process further decreases the true savings which are available for financing American enterprises.

Eighth. The paradox of apparently huge supplies of investment capital, in spite of the fact that national dissipation of capital has continued for several years, is partially explained by the large amount of American securities sold to foreigners, together with lack of opportunity for reinvestment of the proceeds from such sales.

Ninth. Taxes of all kinds now absorb a greatly enlarged proportion of the national income. To some slight but indeterminate degree expenditures by government increase the productive power of the country. Nevertheless, even productive projects are usually constructed at excessive cost when under government direction, and most of them fail to create sufficient income to cover proper depreciation, interest charges and ultimate extinguishment of capital.

Tenth. Government is replacing the individual capitalist as an increasingly important factor in the loan market. Already government has become the country's largest landlord and by means of loans is acquiring a dominant position in agriculture, railroads, utilities, banks and many other branches of our economic life.

Eleventh. Instead of relying upon its own efforts, both for current income and for savings against future vicissitudes, our population now looks to the government for day to day support, for jobs, and for protection against old age, apparently in the naive belief that government has income of its own or else can obtain unlimited income, irrespective of national production.

In addition to the specific factors which have been enumerated, such a profound change has occurred in the attitude of government and of a large section of the public toward industry and enterprise as to constitute a reversal of our former philosophy. Instead of approving the achievements of those who acquire wealth and power as a result of legitimate activity, present emphasis looks toward restriction of enterprise, limitation of profits from enterprise, confiscation and redistribution of large incomes and capital accumulations, efforts to achieve security by means of price fixing and wage fixing, monetary manipulation as a substitute for a free economy, and adoption of the theory that government can and should support the population.

No attempt will be made to determine whether the economic philosophy of recent years is or is not preferable to that followed by the United States from earliest days to 1930. But most business men fail to realize that the American system of free enterprise is gone, that we no longer live in a capitalistic economy. This is self-deception. It ignores the conclusive evidence that the United States as a capitalistic economy became insolvent in 1930 or 1931, has continued in that condition and is becoming increasingly insolvent from year to year.

Some may say that this is impossible at a time when deposits in banks are reaching new high levels, when the assets of life insurance companies are increasing and when capital funds are having difficulty in finding opportunities for profitable investment. These facts themselves are not the products of a vigorous free economy. They are rather the effects of a pathological condition and are convincing evidence of the revolutionary change in the American system. This change is best exemplified by the violent contraction in new private financing during the very years when public financing has proceeded in huge volume. Government deficits have merely been monetized. Then they became bank deposits and investment funds. But they are not true capital, and a system of healthy private enterprise cannot be based on this kind of money juggling. An enterprise system lives on equity capital. Efforts to combine private enterprise with government operations in the economic field first interfere with equity capital and force investment funds into senior securities. In due time this process impairs capital structures of private enterprises, and the ultimate phase is inability to issue even senior corporate capital in competition with government loans. The United States is now entering the later phase of that process.

Three great industries have roughly measured economic improvement in the United States: the railroads, the utilities and new construction. American railroads have been able to obtain no equity capital since 1930. Utilities have been able to obtain only $26 million of equity capital from 1932 to date. New construction for many years has proceeded at a fraction of computed normal requirements. These three major industries largely determine whether activity or stagnation will characterize an extensive group of related industries. In the aggregate the position of these industries gives the final answer as to whether we have prosperity or depression.

There is no longer any doubt about the magnitude of the present depression. This depression is essentially the handiwork of government. Economic and financial distortions are largely absent. Reasons why business cannot prosper are obvious. They center around tax burdens which are out of proportion with national income and particularly onerous on corporate income, labor legislation and its administration which encourage inefficiency and irresponsibility, competition by government with its own citizens, price fixing and credit manipulation, and replacement of competence and responsibility in business management by governmental intervention applied arbitrarily and with political objectives. Not one of these causes of the depression has been remedied or is even in process of solution.

In spite of the length and depth of the depression no evidence can be cited that positive and permanent improvement is imminent. New capital issues are few in number and for the most part represent efforts by corporations to defend their competitive positions, not to expand capacity or introduce new products. As almost all of these issues now take the form of senior securities it is evident that the financial structure of American corporations is progressively being impaired.

Moreover, such business improvement as now appears possible is not based on increasing pressure of investment funds and increasing demand for goods but on desperate monetary and credit policies. Activity induced by these measures is neither wholesome nor permanent. No prospects exist for satisfactory business until this country is willing to accept the fundamentals which produce capital formation and its productive employment.

Whether the American people wish to proceed with present economic deterioration or resume the progress of earlier decades is a matter of free choice. Prosperity can be had if the people are ready to forego economic magic and accept the truism that production creates purchasing power and that purchasing power without production is an illusion.

During the years following 1930, enterprise capital has been moribund. Yet the population enjoyed the same amount of food, the usual quantity of clothing, though perhaps of somewhat lower quality, attended as many movies and burned as much gasoline. Consumption in general has not declined. But the drastic shift in the national attitude toward enterprise and the creation of wealth has not only terminated capital formation but has resulted in actual shrinkage of

pre-existing capital. Today the United States is poorer than it was eight years ago. This may be gratifying to those who approve present policies of government, present relations between employer and employee and the present standing of the United States in the eyes of the world. Certainly these things proceed directly and inevitably from the delusion that we are operating under capitalism when actually we are violating most of the prerequisites of capitalism.

At least from 1930, and possibly before that date, the United States abandoned the capitalistic system. It was replaced by what is euphemistically called "economic planning." Therefore we have no recent experience as to whether or not capitalism has failed, because we have not been operating under that system. Predictions are impossible in regard to the likelihood of new investments, of business improvement, of corporate profits and of improving national income, because free enterprise no longer prevails. Business men and investors no longer reason and calculate upon the possibility of producing goods and rendering services with a net return to themselves, but upon the chances of outguessing the master-planners, of retaining operating authority in their own plants and of devising methods of escaping taxation so ruinous that operations become completely impossible.

At the present moment there are no indications that our population is ready to demand the conditions under which capitalism can function. We regard an increasing national debt as an asset and as a motivating force for business recovery; we consider the currency not as a medium of exchange but as an instrument with which to control prices, regulate employment and mold national industry to some predetermined program; we seek prosperity by destroying wealth. When this curious mechanism of incongruities and fallacies refuses to function we proclaim that capitalism has failed. In reality we are only affording convincing proof that there can be no capitalism without capital.

Progress Report

American Research Committee on Grounding

AT the spring meeting of the American Research Committee on Grounding, the Technical Subcommittee submitted a Progress Report to the representatives of the 14 national organizations which are cooperating in this movement. The report covered six additional field investigations and several sets of laboratory tests.

In one of the six cases investigated no trouble was reported—the investigation being made because in the construction of a large building the electrical isolation of all protective grounds from the piping systems had been attempted. Electrical tests and inspection showed, however, that such isolation had not been attained.

In the second case reported on the complaint, was of leaky water pipe joints, and the trouble was apparently due to a combination of high water pressure and poor workmanship in the original installation.

In another case where the complaint was of a failure of boiler tubes steady readings of small direct current were obtained at the boiler, indicating galvanic action. On the pipes and grounding conductor close to the service entrance the readings were small and fluctuating, indicating stray electric railway currents.

In the three remaining cases the complaints were of discoloration, or other impairment of the quality of the water delivered through taps on customers' premises. Of these three cases one showed no electric current present on the pipes, another was cleared up by lime treatment of the water, and the third case was remedied by reducing the temperature of the hot water to 140 deg.

To date the Technical Subcommittee has investigated some 26 field cases where complaints have been made, and where it was suspected that stray alternating or direct current might have been a factor in producing the trouble. In none of the cases so far investigated, however, has the trouble been found to be due to alternating current on the water piping system, although on the other hand investigations have not shown that such current may not have contributed to the cause of the complaint in some of the cases. A number of significant factors have been found, including the tendency of the water in question to corrode the piping or other metal, the effect of dissimilar metals in the piping system creating galvanic couples, and corrosion of hot water supply boilers due to abnormally high temperatures. Further field investigations are to be made as cases are reported to the Committee by water companies where troubles such as corrosion, impairment of water, sparking, or electric shock are suspected as being caused by electrical grounding.

Field work is being supplemented by laboratory investigations of the fundamental electro-chemical principles involved. It is believed that these will throw considerable light on the causes of the water companies' difficulties.

Laboratory tests on samples of metals simulating pipes have been made. These tests have indicated many factors that enter the problem of the effects of superimposed alternating current on galvanic cell current and further tests to determine the fundamentals involved are now being undertaken.

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and even the newsboys quickly enlisted in the undertaking. Salesmen working on a specialty basis were to pledge themselves to make at least ten calls a day. People behind the counter were to pledge themselves to an attempt to make more sales. Everyone was asked to put on extra sales steam, each using the methods best fitted to his own business.

The most amazing result of the campaign Mr. Burritt found to be the receptive attitude of the public.

"It seems more than possible that we are on the eve of one of those great, and sometimes unexplainable, movements that have from time to time swept across the nation with irresistible force," is the opinion of Mr. Burritt.

Ward Harrison, General Electric Company, closed this session with an excellent display of fluorescent lamp applications and discussed its uses and application. Mr. Harrison saw in it great possibilities as another load builder for the public utility companies.

FOURTH GENERAL SESSION

The fourth and closing session opened Thursday morning with a report of the Prize Awards Committee given by H. P. Liversidge, Chairman, and the announcement and presentation of prize awards to various individuals, as reported elsewhere in this issue.

The next speaker, Dr. Virgil Jordan, President of the National Industrial Conference Board, proposed a definite

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program for the recovery of the American economic system.

After a review of the serious plight of the country which, with most of the world, he said, has been involved in a progressive process of economic, political and social deterioration, he declared that "At this crucial moment American business should file its criticisms and complaints for future reference and turn to the active task of reconstruction. It should make no more vague, indefinite, and conditional offers of cooperation with government. It should come forward to the American people with an unconditional pledge and a specific program to re-employ our labor and to rehabilitate our industries, step by step during the next two years, and it should then demand the aid of government in certain specific ways to that end.

Dr. Jordan stressed the obligations of business to bring about recovery by establishing and operating adequate facilities for retraining and rehabilitation of workers not employable because of loss of skill and long unemployment. This could be done, he said, by using in part private resources and in part public work relief funds.

Dr. W. W. Cumberland, economist, of Wellington & Company, presented a gloomy picture of the future for capitalism and declared that "this depression is essentially the handiwork of government."

He placed the blame on tax burdens which are out of proportion with national income. Onerous corporate income taxes, labor legislation, subsidized government competition with business, price fixing and credit manipulation were singled out as oppressing business. Government restrictions applied arbitrarily and with political objectives were seen as other depression causes.

Dr. Cumberland painted a dark picture of present conditions with mounting taxes and government interference in business, which has strangled initiative and frightened capital into hiding. He held that the key to recovery lies in the treatment accorded the railroads, the utilities and new construction and held that these three industries give the final answer as to whether there is prosperity or depression.

In summarizing his findings Dr. Cumberland said: "Three great industries have roughly measured economic improvement in the United States: the railroads, the utilities and new construction. American railroads have been able to obtain no equity capital since 1930. Utilities have been able to obtain only $26 million of equity capital from 1932 to date. New construction for many years has proceeded at a fraction of computed normal requirements. These three major industries largely determine whether activity or stagnation will characterize an extensive group of related industries. In the aggregate the position of these industries gives the final answer as to whether we have prosperity or depression."

CONVENTIONS AND MEETINGS

JUNE

1-2 Heating Piping and Air Conditioning Contractors National Association, Boston, Mass.

6-9 EDISON ELECTRIC INSTITUTE, Atlantic City Auditorium, Atlantic City, N. J.

20-24 American Institute of Electrical Engineers, Washington, D. C.

20-24 American Society of Mechanical Engineers, St. Louis, Mo.

21-24 Canadian Electrical Association, annual convention, Seigniory Club, Province of Quebec, Canada.

AUGUST

29-31 Illuminating Engineering Society, Nicollet Hotel, Minneapolis, Minn.

29-31 Rocky Mountain Electrical League, Canyon Hotel and Lodge, Yellowstone Park, Wyo.

SEPTEMBER

1 Illuminating Engineering Society, Nicollet Hotel, Minneapolis, Minn.

7-9 Pennsylvania Electrical Association, Bedford Springs Hotel, Bedford Springs, Pa.

12-15 National Electrical Contractors Association, Book-Cadillac Hotel, Detroit, Mich.

29-30 Indiana Electric Association, French Lick Springs Hotel, French Lick Springs, Ind.

OCTOBER

1 Indiana Electric Association, French Lick Springs Hotel, French Lick Springs, Ind.

3-6 American Transit Association, Toronto, Canada.

3-7 National Restaurant Association, Chicago, Ill.

10-14 American Gas Association, Atlantic City, N. J.

10-14 National Safety Council, Stevens Hotel, Chicago, Ill.

24-28 National Electrical Manufacturers Association, Palmer House, Chicago, Ill.

Sales Mean Jobs

(*Continued from page* 294)

We have received hundreds of letters and wires from other manufacturers, from Chambers of Commerce, from trade associations. The gist of all these messages is this: "We have read of this Crusade. We believe in it. How do we begin?"

It seems more than possible that we are on the eve of one of those great, and sometimes unexplainable, movements that have from time to time the interest of the public. For you and for us in the appliance industry t h e r e a r e two things to remember.

First—the day of specialty selling has not passed. Hard work will still make sales. Salesmen used to say, "Ten calls —one sale." Then they changed this to, "No sales—no matter how many calls," and out in Lincoln today the average salesman is getting his one sale from just a fraction more than the old ten calls! And they will keep on doing it, for the Crusade is not a drive of a week or a month. It's a continuous hard work program, inspired on both the buying and the selling end by an understanding that sales mean jobs.

Second—and this is important—every business profits by the success of every other business.

* * *

You may wish to sponsor the Crusade in the territories you serve—to help you produce sales—or as a cooperative public service in helping dealers improve their business. You may be surrounded by a rising tide of local business interest and public sentiment and find yourself in the Crusade before you know it.

In any event, no matter what appliances you sell—or if you sell none—all the information we possess—all the data —all the plans—are at your service, if you care to use them.